

The MILLING WORLD

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A GREAT CONCERN.

ITS FOUNDATION AND PRESENT PROPORTIONS.

OUTSIDE of the comparatively few localities where flour manufacture is the principal industrial occupation, the proportions of this business are recognized in but a vague manner, and many, otherwise well-informed, people regard the mill-furnishers' business as one of comparatively small importance. With the purpose of doing its share towards disseminating a better understanding of the real position of the mill-furnishing business, THE MILLING WORLD has procured the cuts illustrating this article, and, so far as possible, will give the story of the growth of a house which is most thoroughly representative of this line of productive industry, viz., E. P. Allis & Co., of Milwaukee, Wis., premising that, for much of the information given, we are indebted to the "Millwright and Engineer" of Milwaukee, and the "North-western Miller" of Minneapolis.

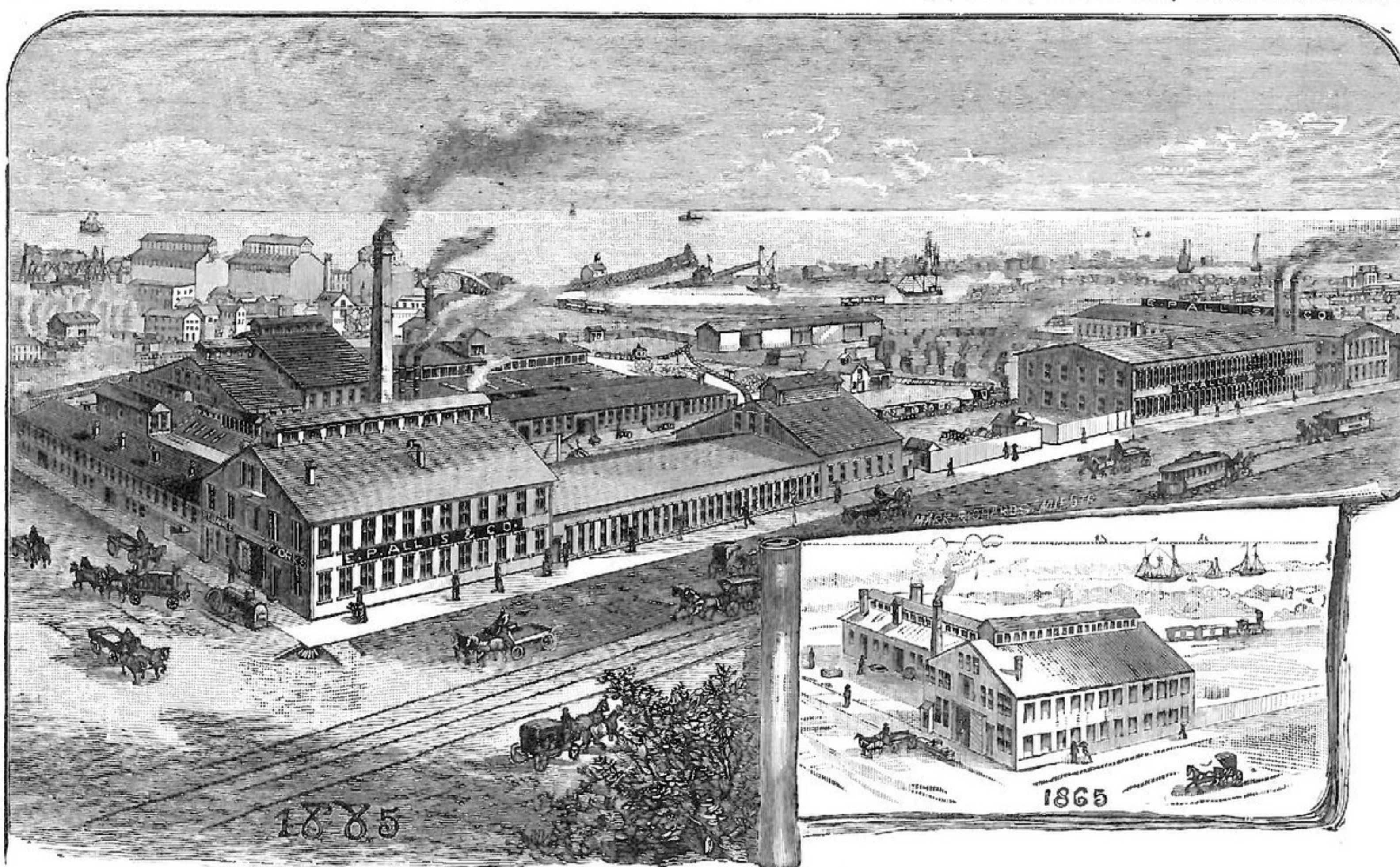
Some time back in the fifties, on the west side of what is now the busy thoroughfare known to the people of Milwaukee as "West Water Street," and a little above the present Oneida Street bridge, the firm of Decker & Seville had in operation a small stove foundry and machine shop, which was the germ of the present "Reliance Works" of Messrs. Edw. P. Allis & Co. To the little establishment was annexed as a sort of side-show, a millstone shop, and here was made the first pair of millstones ever manufactured west

them for the last quarter of a century, and under whose management they have grown to their present enormous proportions. The business at that time was of no practical account, consisting almost entirely of odd jobs and general repairs.

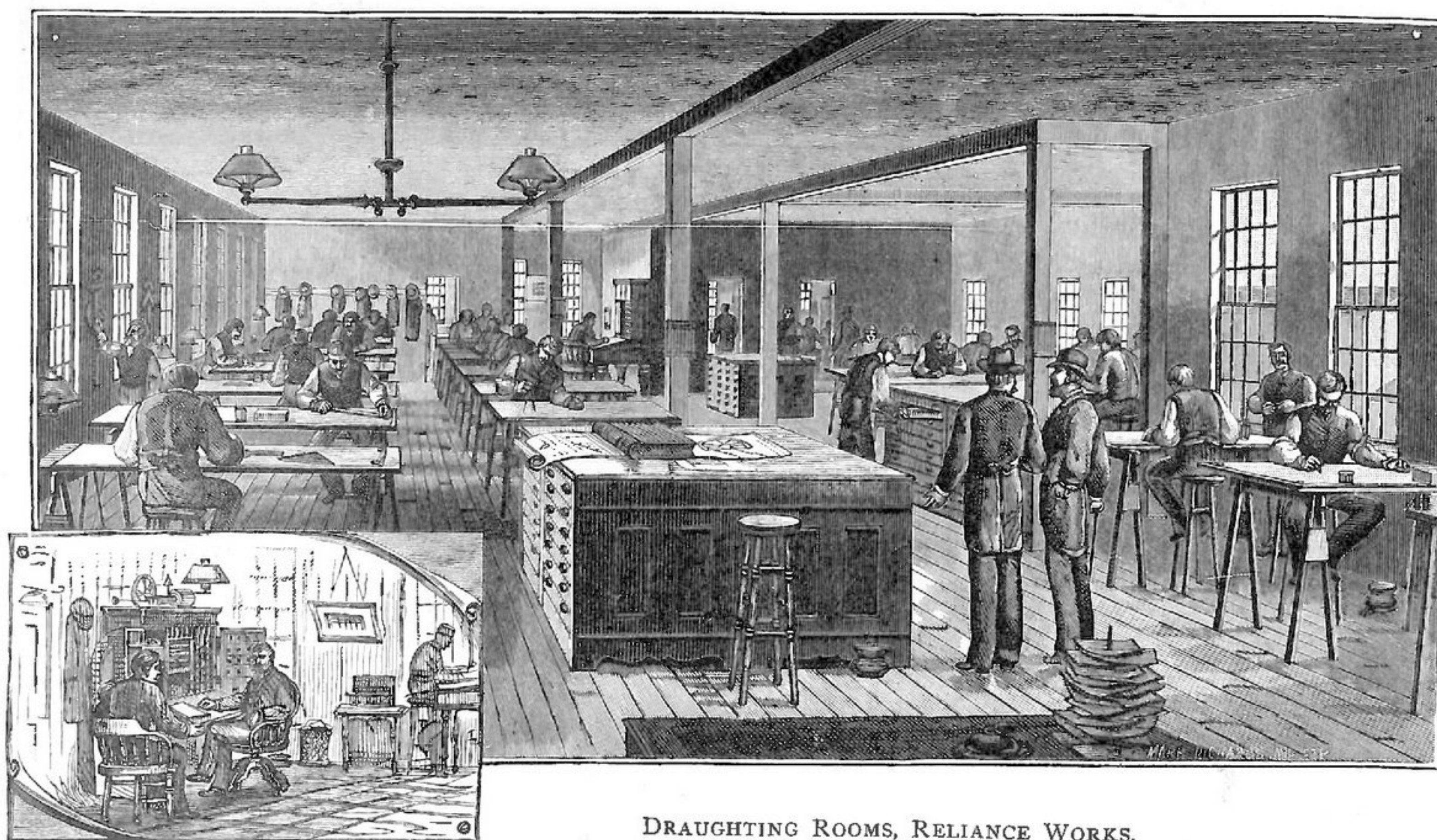
The change of ownership brought new blood and energy into the management, and the new owner, immediately upon taking

keep the whole works busy, was that for furnishing the cast iron "chairs" on which the rails of the old LaCrosse railway first rested. While the price realized was but little more than the price of the iron in the pig, it kept the wheels moving. The first important machinery contract undertaken was that for the machinery for the first elevator built in Milwaukee, which machinery

the peculiar idiosyncracies of its designer. In these mills the patterns of the Reliance Works played an important part, and although many of their number have been destroyed by flood and fire, and others have had to give way before the successive encroachments of the "New Process" and "Gradual Reduction" milling, it is still possible to find, in many mills in the state, ma-



RELiance WORKS, MILWAUKEE, WIS., AS SEEN FROM CORNER OF CLINTON AND FLORIDA STREETS.



DRAUGHTING ROOMS, RELIANCE WORKS.

of Lake Michigan. The buildings stood on two leased lots in what is now the second ward of Milwaukee, and were driven by a small eight-inch cylinder engine. Small as the institution was, it was too large for the capital of its owners, and they went under during the hard times of 1857. The works were then taken in hand by the creditors, and were run under the management of S. S. Daggett, until 1860, when they were purchased by Edward P. Allis, who has owned

possession, assumed and personally discharged all the duties outside of the mechanical department, including those of salesman, bookkeeper, correspondent, paymaster, which last was often by far the most difficult. The business was almost a nullity, and the new owner adopted from the start the policy of keeping the shop full of work and his workmen busy, no matter how small the margin. The first important contract, and one which was undertaken solely to

consisted largely of shafting and pulleys. The flouring mill work, which has since become the predominant feature of the great establishment, was, during the early days, small in amount, simple in character, and was done entirely upon plans furnished by local millwrights. This was the palmy period before the advent of the milling engineer, and as each millwright had his own whims and fancies, no two mills were alike, each preserving and perpetuating in itself

chinery from "Allis's," which is still at work and has been steadily at work for a score of years, a fact which speaks well for the quality and workmanship of the goods furnished in the early days of the Reliance Works.

The old works being at the end of the first five years very much over-crowded, and entirely inadequate to the demands upon them, Mr. Allis purchased the present site of the works, and the new "Reliance" works were built. The old shops were floated down the Milwaukee River on barges, moved to the new location and made part of the outside shops. Some parts of the original buildings thus removed are still standing, but so built over, remodeled and changed, that their identity is only a matter of conjecture. The original appearance of the "New Reliance," and their present immense extent, are well portrayed in the first of the series of illustrations which appear in this connection. The motive power of the new works was a fifteen horse-power Ames portable engine, to which was soon added, alongside, one of twenty-five horse power, the pair running singly or together as the requirements of the work to be done, made it necessary. As the mill furnishing work of the establishment was very unsatisfactory to the proprietor, being done to suit the whims and caprices of millwrights; and entirely without system or scientific knowledge, he was constantly on the look out for some specialty, in the manufacture of which the surplus facilities of the works could be profitably employed. In the search large sums were spent on a rotary spader, an anti-friction bearing for car axles, and various other things, none of which, however, were

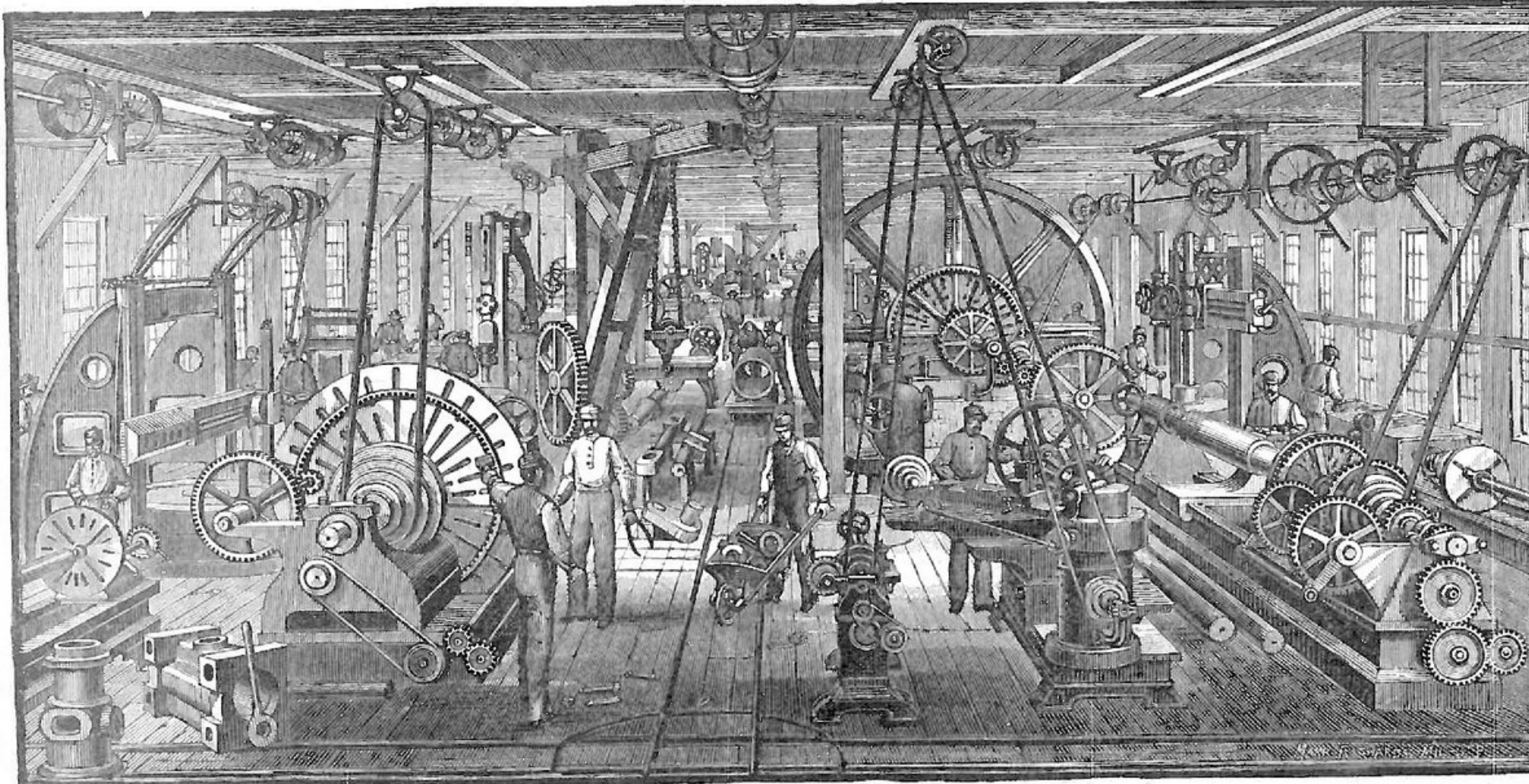
successful. Among other ventures at this time was that of casting water pipe, in which large sums were expended, and which was

therein, this establishment holds an exalted position, with a trade which is steadily increasing as the years roll by.

considerable money and much time in search for an engine of undoubted excellence in performance. He finally succeeded, and in

Providence, the last five years of that time as superintendent, went to Milwaukee and assumed charge of the Reliance Works as superintendent. Under his guidance the manufacture of the Reynold's Corliss engine was undertaken, and has been prosecuted with an unprecedented degree of success, engines of this design being now in use in all parts of the country. More than five hundred of these engines are now at work, among the number being several blowing and pumping engines of large size. Notwithstanding the business depression of the past year, this department has been and is now far behind its orders.

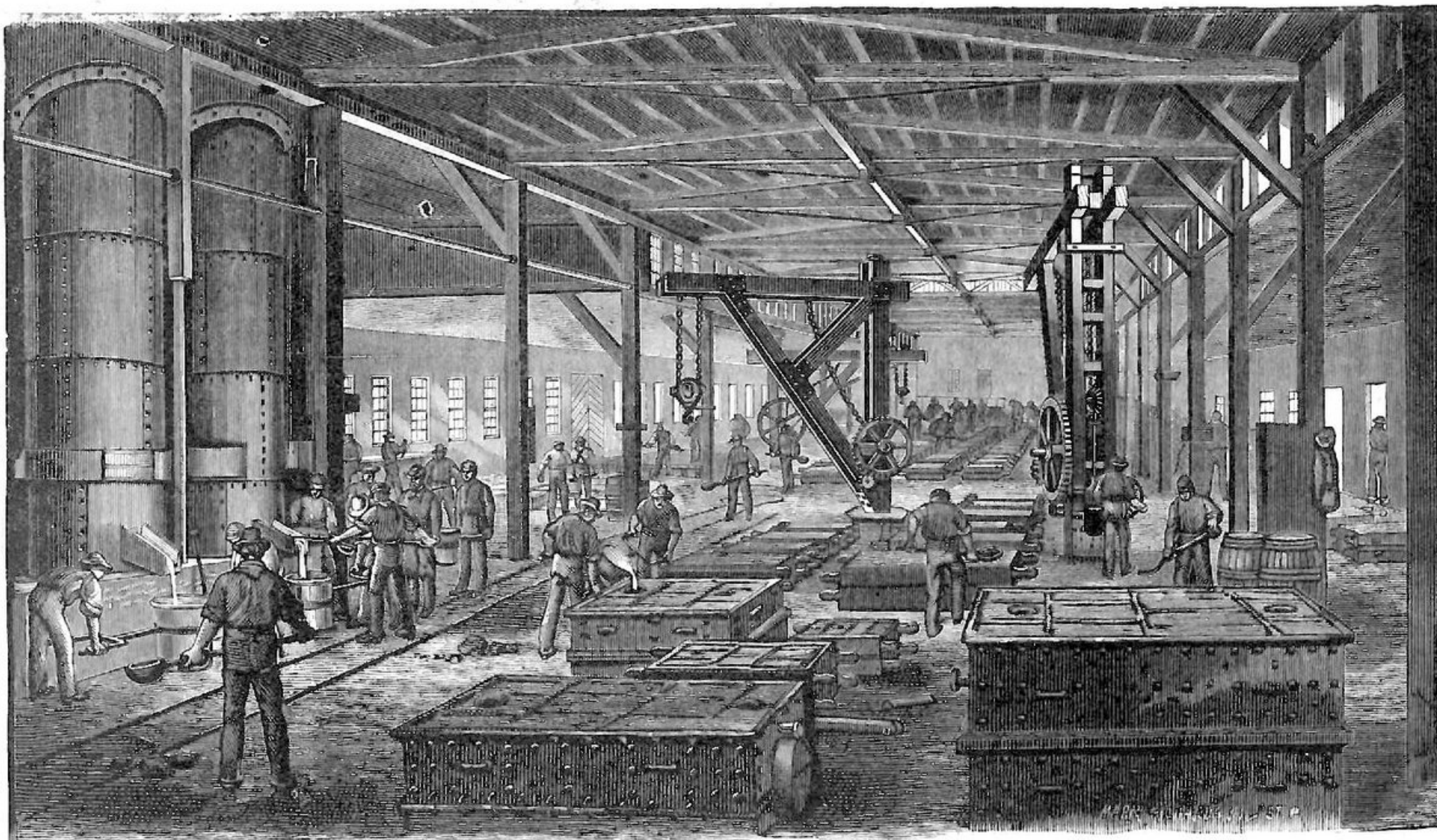
During the years from 1861 to 1884 inclusive, the sales of the Reliance Works have amounted to over fifteen millions of dollars, and during the same time nearly one-third of this amount has been paid out in wages. Over one-half of these sums is the result of the last five years' work. A comparison of the pay rolls and sales books for the separate years included in the above period is instructive. In 1861, the average force employed was about twenty men; the amount paid in wages was \$14,000, while the sales for that year were only \$29,000. In 1862, the sales only reached \$35,500,



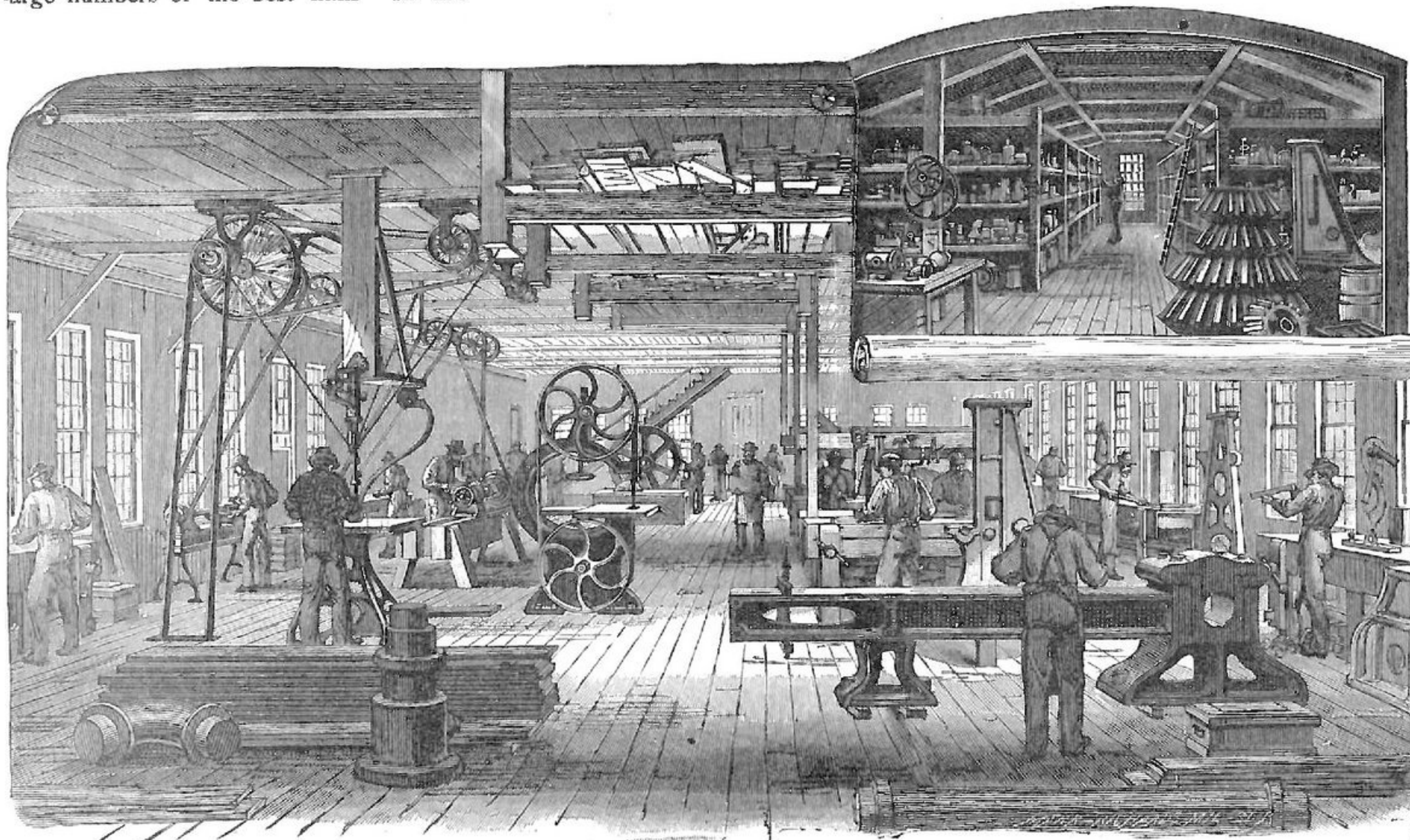
MAIN MACHINE SHOP, RELIANCE WORKS.

subsequently abandoned as unprofitable. At last the milling industry of the country began to undergo a decisive change, the end of which is not yet seen, and Mr. Allis determined that the Reliance Works should have their full share of the work to be done. As the mill owners themselves began to secretly study the art of milling, and to learn for themselves things which they had formerly trusted entirely to the millwrights, the race for supremacy in this new knowledge began.

It was at this time that Mr. Wm. D. Gray, now widely known as a milling engineer and expert, entered upon his duties at the Reliance Works as chief of the milling department, a position which he still holds. Mr. Gray was sent to Europe to learn what was to be learned in European practice which could be made of benefit to American millers. The result of his visit was the inauguration of the roller gradual reduction system in this country, the first complete roller mill in America, known as the Washburn experimental mill, having been built under his direction. Since its completion the milling industry has been revolutionized and in the change, the work of the Reliance engineers and mechanics may be seen in large numbers of the best mills. In the



MAIN FOUNDRY FLOOR AND CUPOLAS, RELIANCE WORKS.



PATTERN SHOP AND LOFT, RELIANCE WORKS.

building of complete roller mill plants, of both large and small capacity, and in the manufacture of the special machinery used

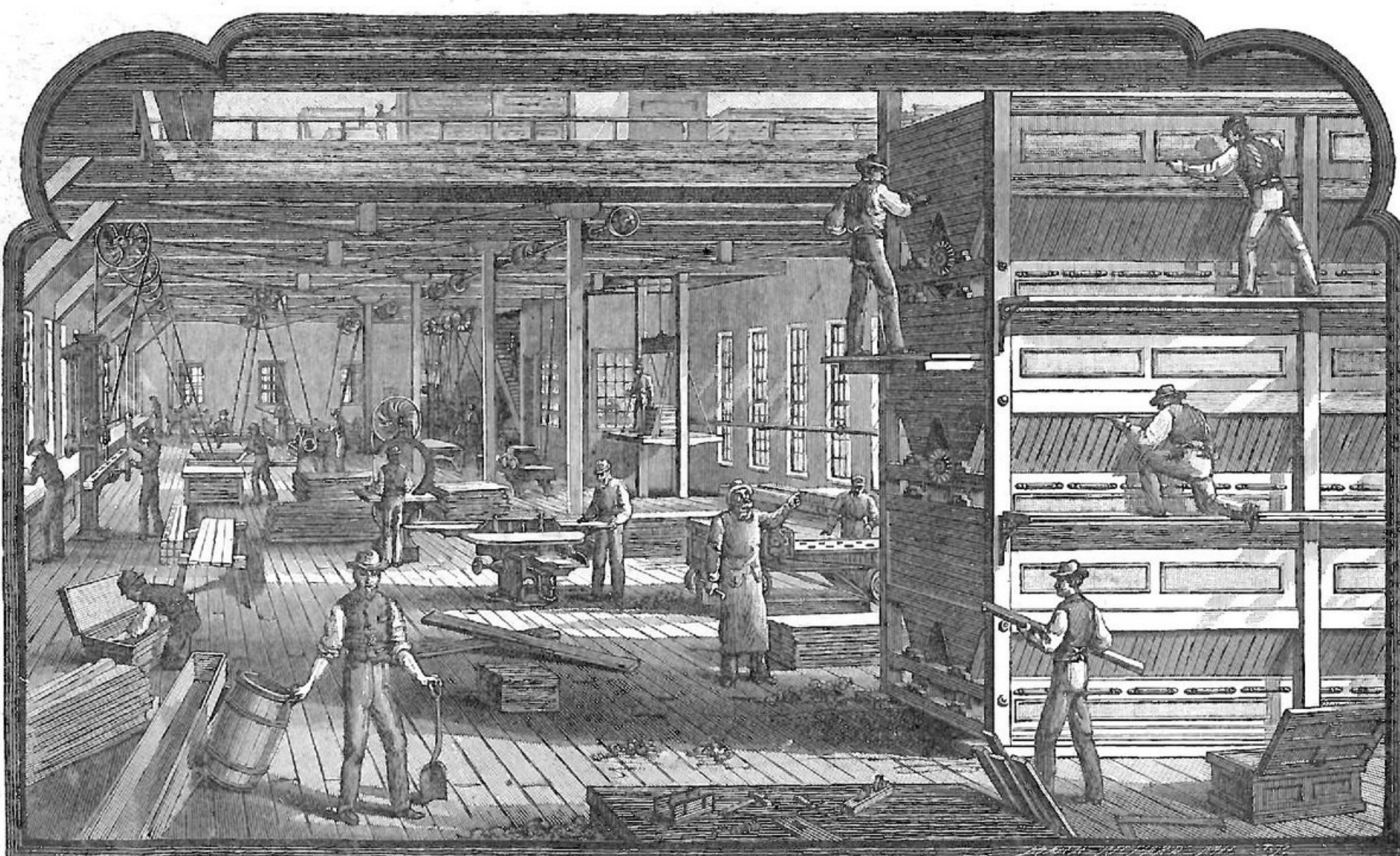
Another special department of the establishment, although of more recent growth has been equally successful. Mr. Allis spent

1877, Mr. Edwin Reynolds, who formerly had for ten or twelve years been connected with the Geo. H. Corliss engine works in

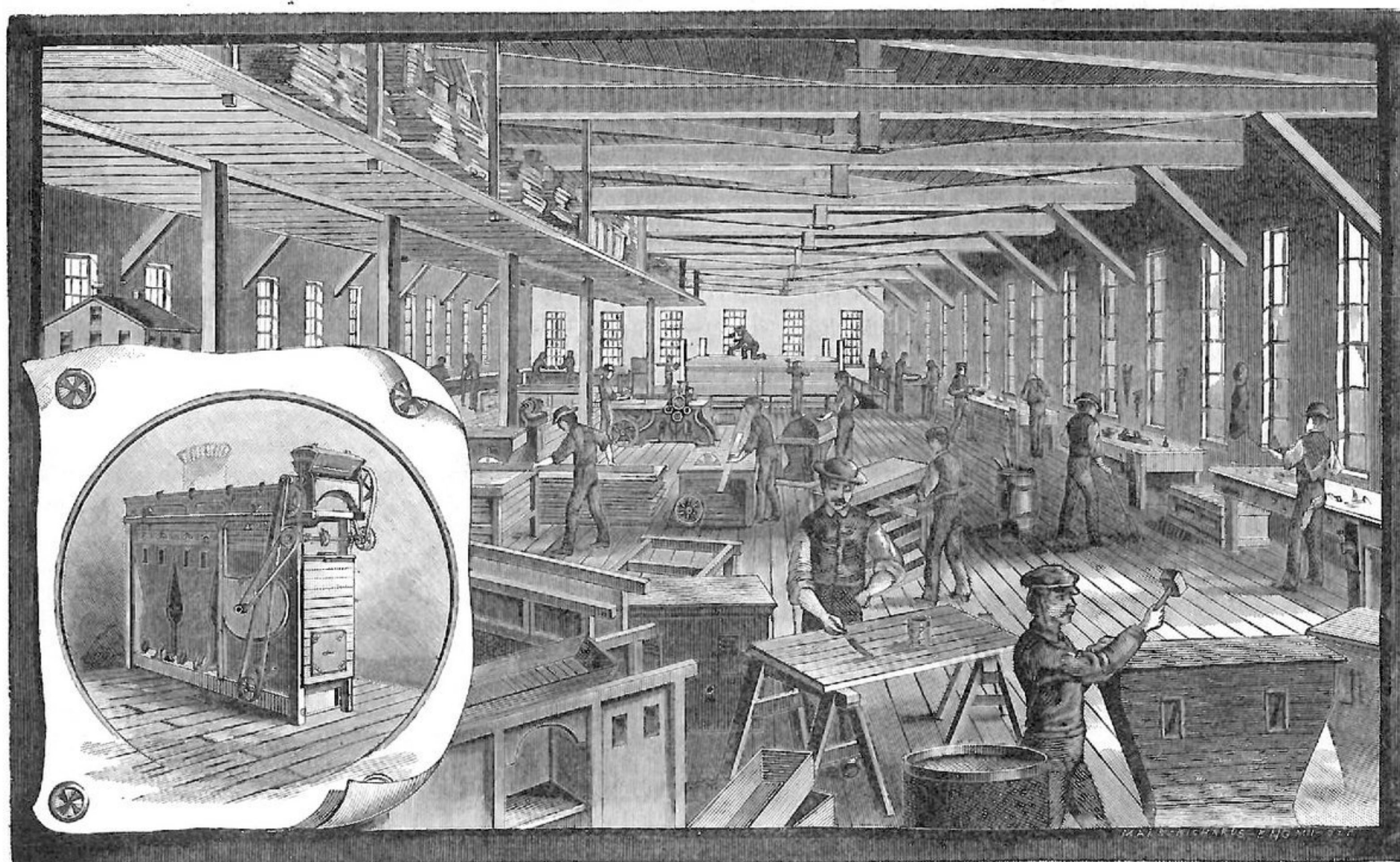
while in wages the account was swelled to \$20,000. The exceedingly large proportion of the receipts paid out as wages is evidence of the peculiar character of the work done, consisting as it did almost entirely of repair work and small jobs, in which the labor was the chief item of cost. When the pipe shop was in operation this condition of affairs was reversed, the raw material being the principal item, and accordingly, in 1871, the wages paid were less than one-sixth the sales, and in 1874, barely one-tenth. Since that time the relative proportion of wages to sales has been steadily increasing, until during the year just closed, with a pay roll numbering nearly twelve hundred hands, the amount paid as wages amounted to over six hundred thousand dollars, the year's sales aggregated something over two millions of dollars. When one considers that a working force of twelve hundred men represents a population of at least five thousand, enough to make a small city, and that of the sum of \$600,000 nearly the whole is spent at home, the importance of the establishment as a factor in the industrial and commercial prosperity of the community in which it has found its place, becomes apparent. During the entire history of the works, there has always existed the greatest harmony between the employer and the employed, and such a thing as a strike has been unheard of. Some of the

men have been steadily employed nearly the whole period, and a large number hold permanent positions "during life or good behavior." The history of such an enterprise as is here outlined, would be incomplete if it did not convey to the reader some idea of its present extent and its internal and external appearance. The latter will best be appreciated from the illustration at the beginning of this article, the former from those which follow. In the space at our disposal it is impossible to give more than a cursory description.

As the incoming visitor enters Milwaukee from the south on the C. M. & St. P. railway, he notices on his left a rather confused series of wooden buildings, and as the train rolls by he discovers the legend "Reliance Works" on the largest of the series. The first buildings were erected on the southeast corner of Clinton and Florida streets. They consisted of the machine shop and foundry, the former 60x140 feet, two stories high, with an attic or pattern loft under the roof. The foundry has since been moved into more commodious quarters and the original building, enlarged and extended, is now used, the ground floor for the erecting shop and the second story for pattern storage. The works now extend from Florida to Pierce street on Clinton street, and



FIRST FLOOR, NEW CARPENTER SHOP, RELIANCE WORKS.



SECOND FLOOR, NEW CARPENTER SHOP, RELIANCE WORKS.

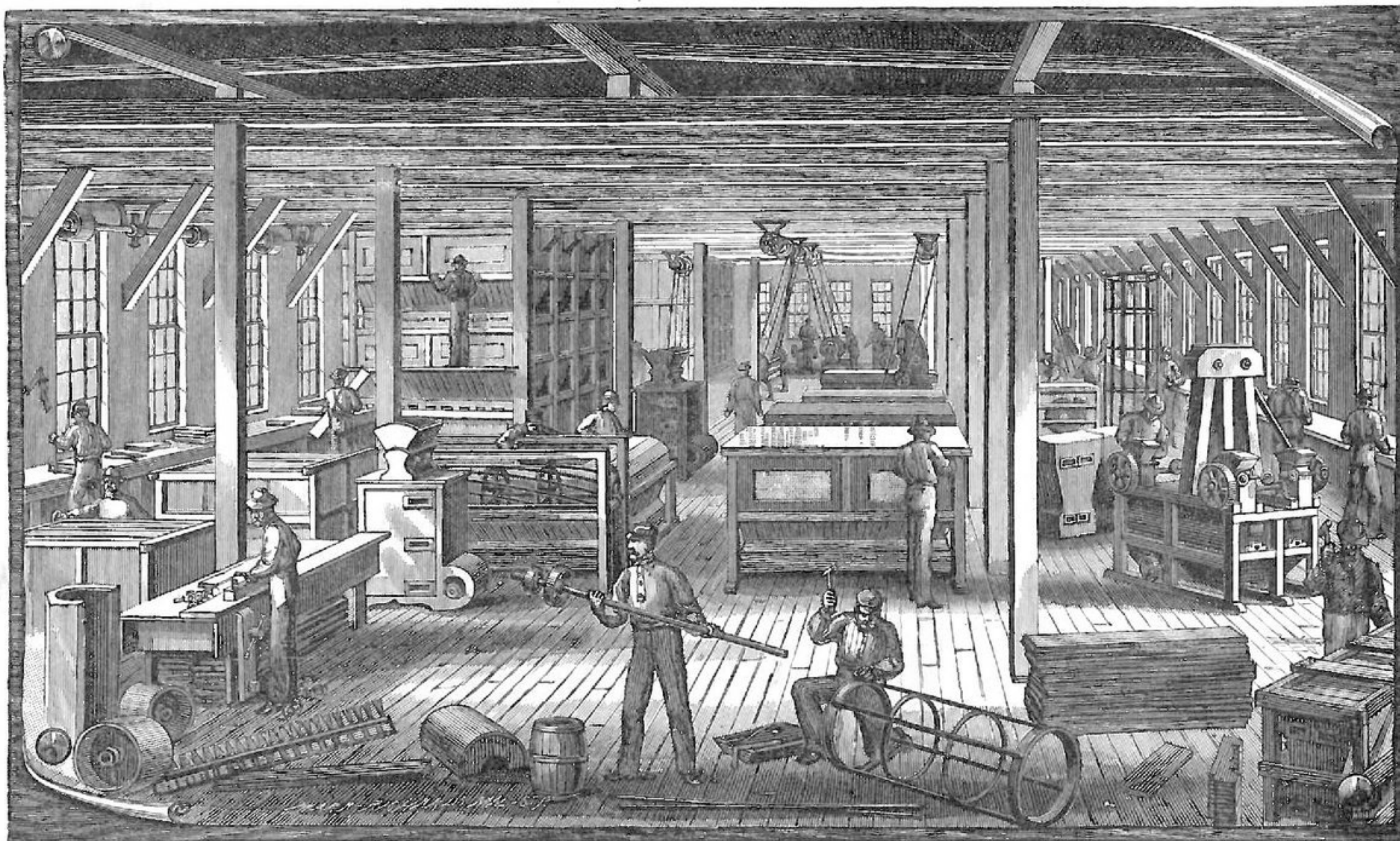
occupy all the space between Clinton street and the St. Paul railway tracks on Barclay street, covering three entire blocks and the intervening streets. The main machine shop reaches from the corner of Florida along Clinton a distance of 425 feet, while what are designated as the new carpenter and machine shops reach from the corner of Pierce street towards Florida, a distance of 330 feet, and on Pierce street a distance of 208 feet. The foundry now covers a ground space of over 122x374 feet, exclusive of sand, coal and iron sheds.

The main entrance to the works is on Florida street. Over the door is a sign, weather-beaten with the suns and storms of twenty years, bearing the simple word, "Office." Ascending a flight of well-worn stairs, and turning to the left, the visitor enters a straggling suit of offices. As an indication of the amount of work done in the office, it may be stated that a single day's mail reaches four or five hundred letters received and as many more written and sent out. Passing the main office one enters the draughting rooms, where all of the great variety of work done in the shops is carefully drawn out and detailed, and where are kept on file the general and detail drawings

of the work done for years past. Between thirty and forty men are constantly employed in this department. At the right of the main office entrance on the ground floor is a small door, through which access is gained to the main machine shop.

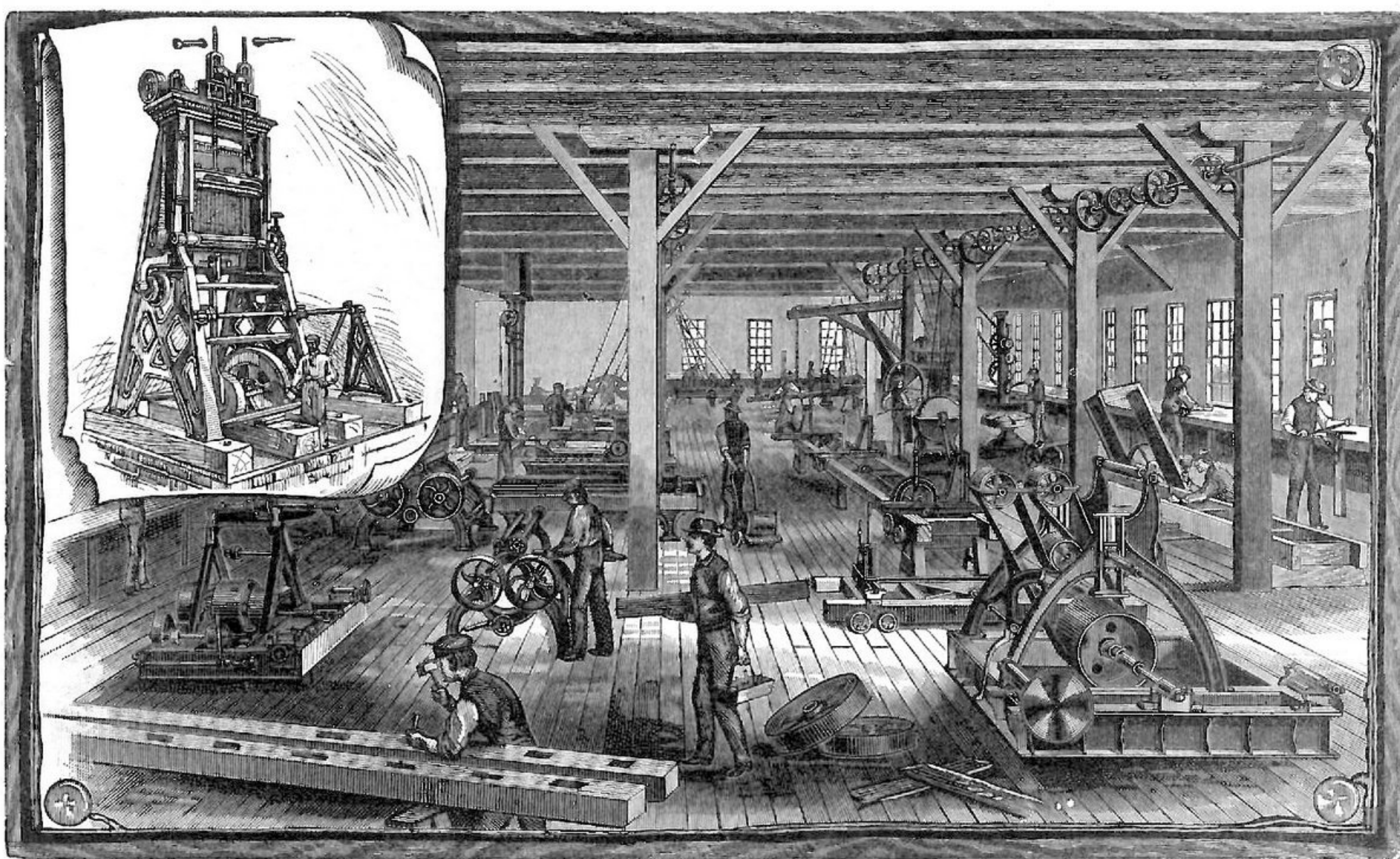
The main floor, 60x350 feet in size is literally packed with the finest machinery, no money having been spared in making the equipment the finest and largest in the country. Lathes, planers, drilling machines, boring mills, shaping machines, gear cutters, etc., in great variety and all sizes are crowded together so as barely to leave standing room for the legion of strong armed mechanics who direct their motion. Beyond the machine shop, adjoining it on the same floor is the blacksmith shop 60x60 feet well provided with steam hammers, forges and the other necessary appliances for doing the miscellaneous work which in great variety is incident to an establishment doing such an amount of work.

Adjoining the main machine shop and extending to the railroad tracks on Barclay street is what is called the erecting shop. It covers a ground space of nearly 20,000 square feet, and contains some of the heaviest machinery in the country. One planer will take in work ten feet square and take a

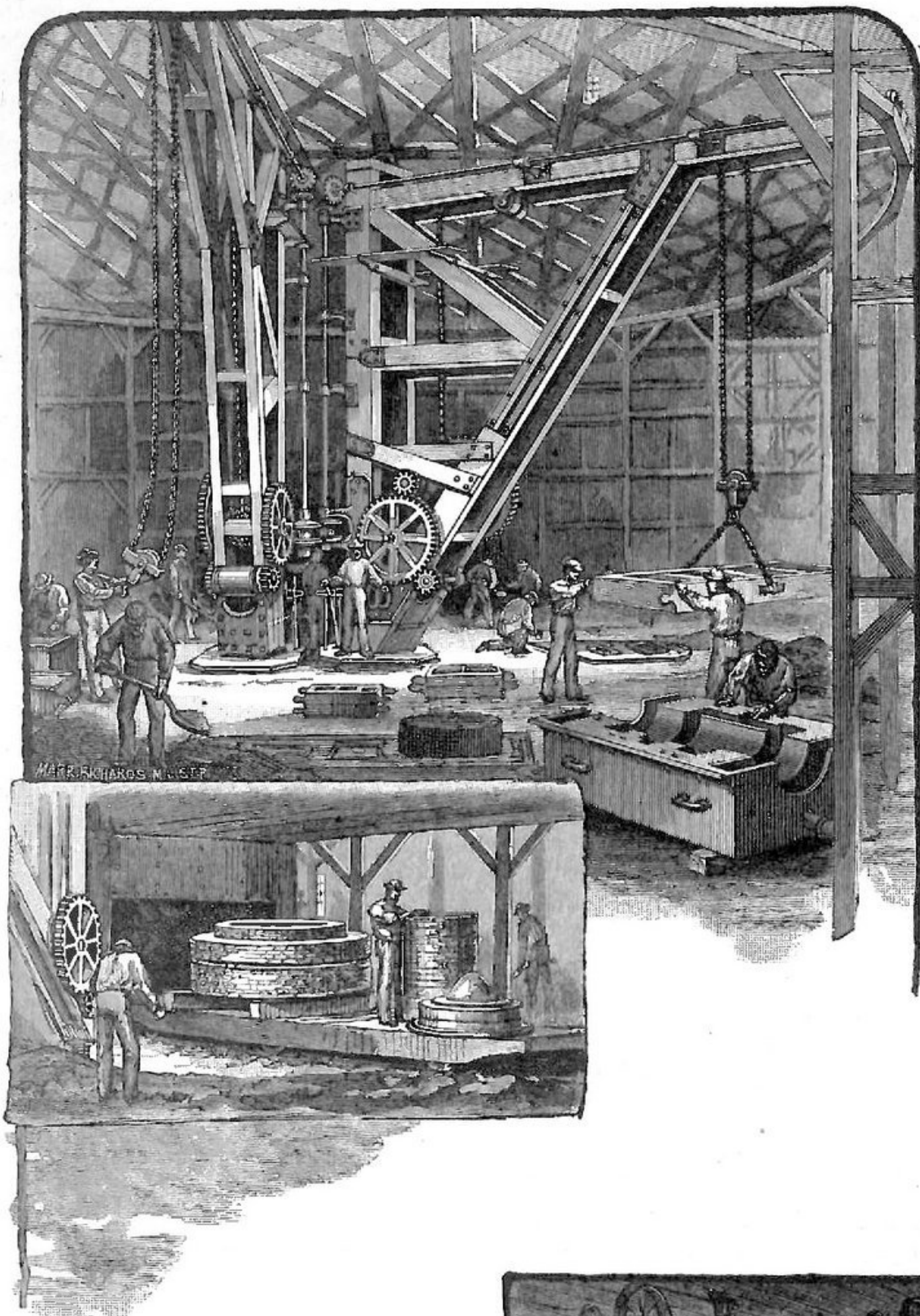


SECOND FLOOR, NEW MACHINE SHOP, RELIANCE WORKS.

cut twenty feet long, another is nearly as large, while there are appliances for boring cylinders and other work of similar character of a size only limited by the demands of the trade. In the erecting shop are assembled and put together the parts of the engine and other heavy work done by the shops. Something of the character of this work is shown by the pair of mammoth pumping engines built for the city of Alleghany, Pa., one of which in process of erection is shown at the right of the interior view of the erecting shop. Nothing short of actual figures will give any adequate idea of the magnitude of these engines. From the floor line to the centre of the crank shaft they measure twenty-three feet, the fly wheels, two on each engine, are sixteen feet in diameter, and weigh fifteen tons each. From the floor level to the bottom of the pumps which are placed directly below and in line with the steam cylinders, the distance is thirty feet. Concerning these engines, Prof. D. M. Green, of the Rensselaer Polytechnic Institute, who made the expert test to determine the duty performed, says: "Their behavior is simply unquestionable," and adds: "They must take rank among the best and most efficient of modern pumping engines." On this same erecting floor have been set up during the past twelve months, besides



FIRST FLOOR NEW MACHINE SHOP, RELIANCE WORKS.



STEAM CRANES AND CORE OVENS, RELIANCE WORKS.

the engines above referred to, pumping engines for Milwaukee, Wis.; St. Paul, Minn.; Decatur, Ill.; Omaha, Neb., and the Portage Straw Board Works, Circleville, Ohio; blowing engines for Pittsburg, and a large number of standard Reynolds-Corliss engines of all sizes, for flouring mills, electric light plants, saw mills, and various other manufacturing purposes.

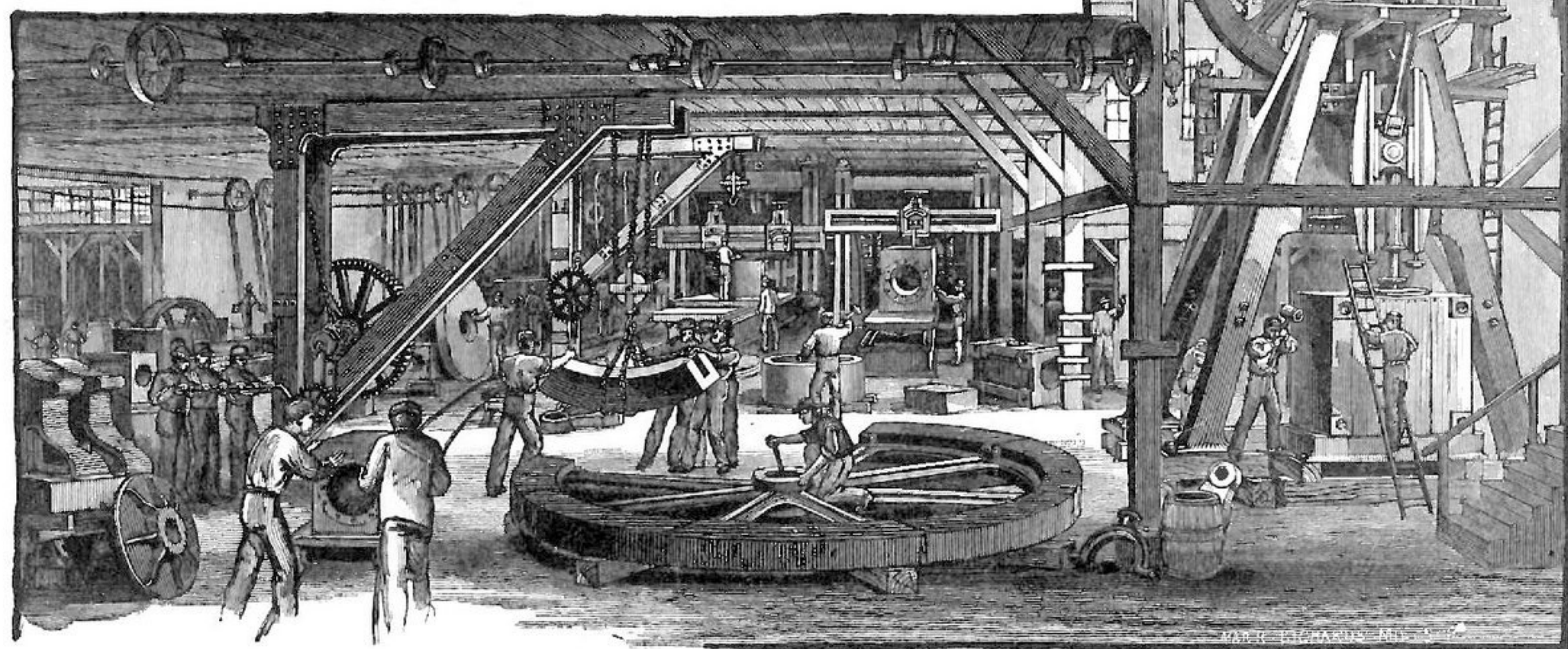
South of the erecting shop, and separated from it by a fire wall, is the foundry. Passing from the erecting shop, the visitor enters the loam molding department, where are made the molds for engine cylinders, pump chambers, etc., etc. On either side are the core ovens, in which the cores are dried,

while overhead are two traveling cranes one of twenty-five and one of forty tons capacity, while just beyond are two steam cranes, one of fifteen and one of twenty-five tons capacity. One of the most prominent features of the works is the great number of hand, steam and traveling cranes, railroad tracks, turn-tables, cars and other appliances for lifting, handling and moving heavy work. Everything possible is done to reduce the amount of manual labor required, and the heaviest work can be lifted from the mold in the foundry, placed on the car, carried to the lathes and planers, handled through the erecting shop, and delivered on the railroad car at the door, all by mechanical means. Beyond the steam cranes are the cupolas, and still further on is the main foundry floor, for green sand molding. Except in size and completeness of equipment, it is not remarkable. Thirty tons of iron is the daily average heat. In connection with the foundry one naturally thinks of the patterns used, and the place where they are made. The pattern shop of the Reliance Works is in the second story of the old machine shop. This department is thoroughly equipped with all the necessary tools and appliances, and a force of thirty to fifty men is constantly employed in adding to the extensive assortment of patterns, which forms one of the most interesting features of the great establishment. Over the pattern and erecting shops are the storage rooms for patterns, the variety of which is endless and their money value almost beyond estimate. Here are found the patterns from which were

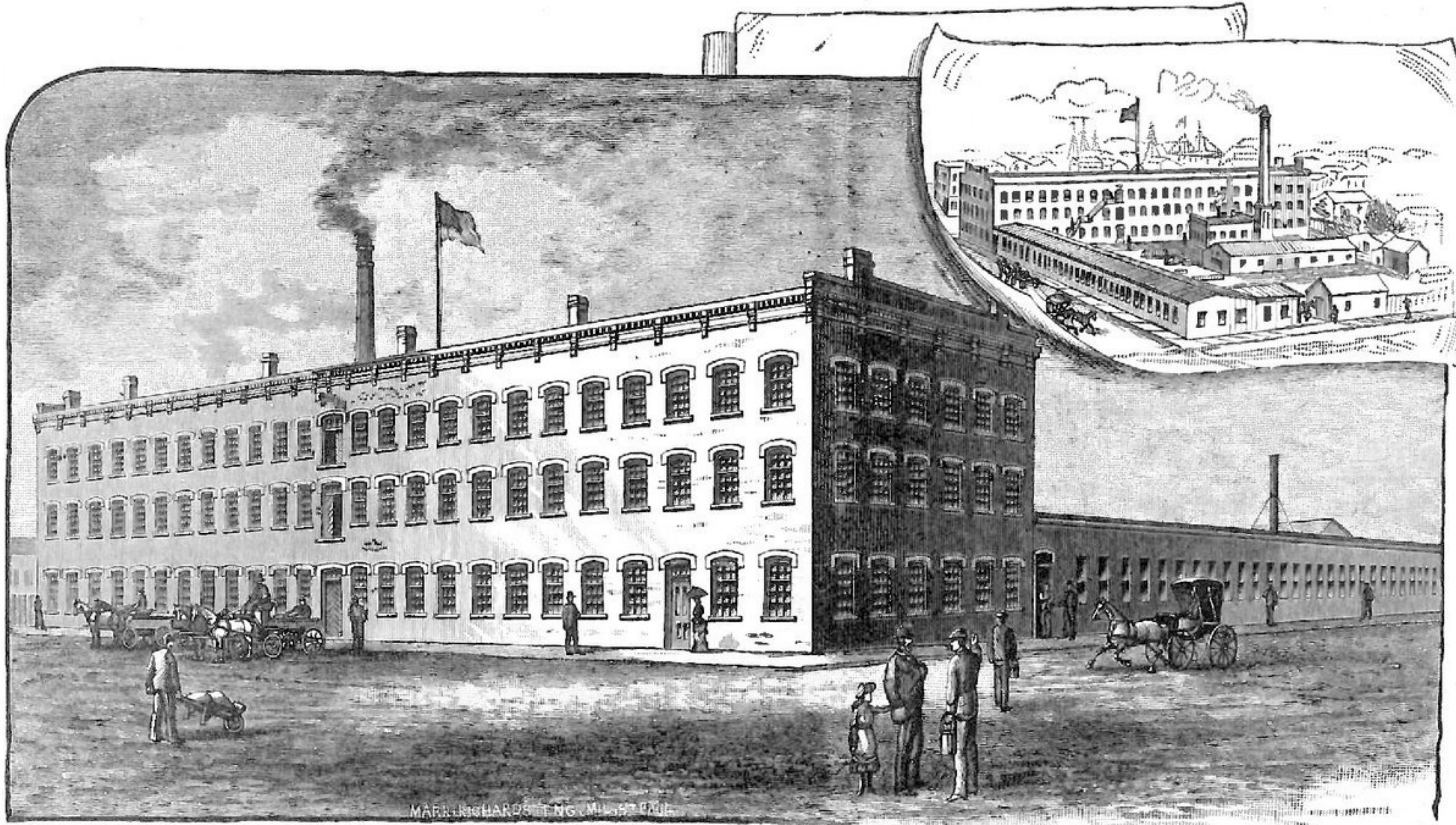
cast the irons for the primitive overshot wheels and other work used in the pioneer frontier mills, and here, also, are the patterns for the latest designs of engines, mill work, and the thousand and one other things which make up the daily output of the Reliance Works.

Between the main shops and foundry and the wood-working and new machine shops, there is an open space of 312 feet, which it is proposed to fill in the coming season, so that the buildings will be continuous from Florida to Pierce streets, a distance of nearly 1,100 feet. The portion of the grounds at present not occupied by the buildings, is used for lumber yards, storage sheds, etc. The stock of lumber carried usually averages several million feet. All that used in the manufacture of bolting chests, purifiers, centrifugal reels, and other special mill machinery, is carried in the yard for two to three years, and before using is put through a steam dry kiln on the premises.

The "new carpenter shop," as it is called, is located on the corner of Clinton and Pierce streets, and has a frontage of 60 feet on the former, and 208 feet on the latter. It is two stories in height, and was erected in 1882, and opened for use June 1st, 1883. The first floor is finely equipped with a full line



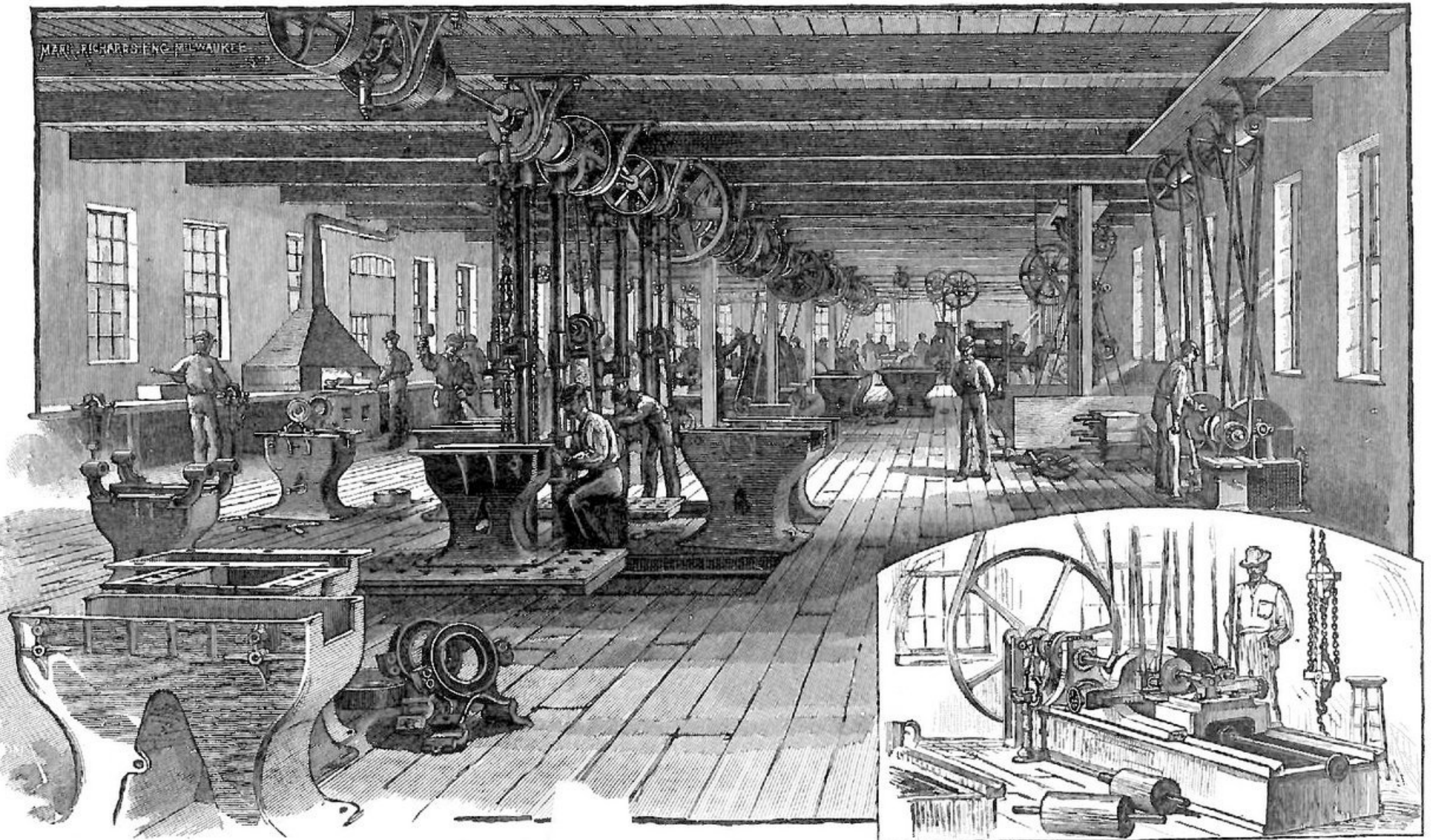
ERECTING SHOP, RELIANCE WORKS.



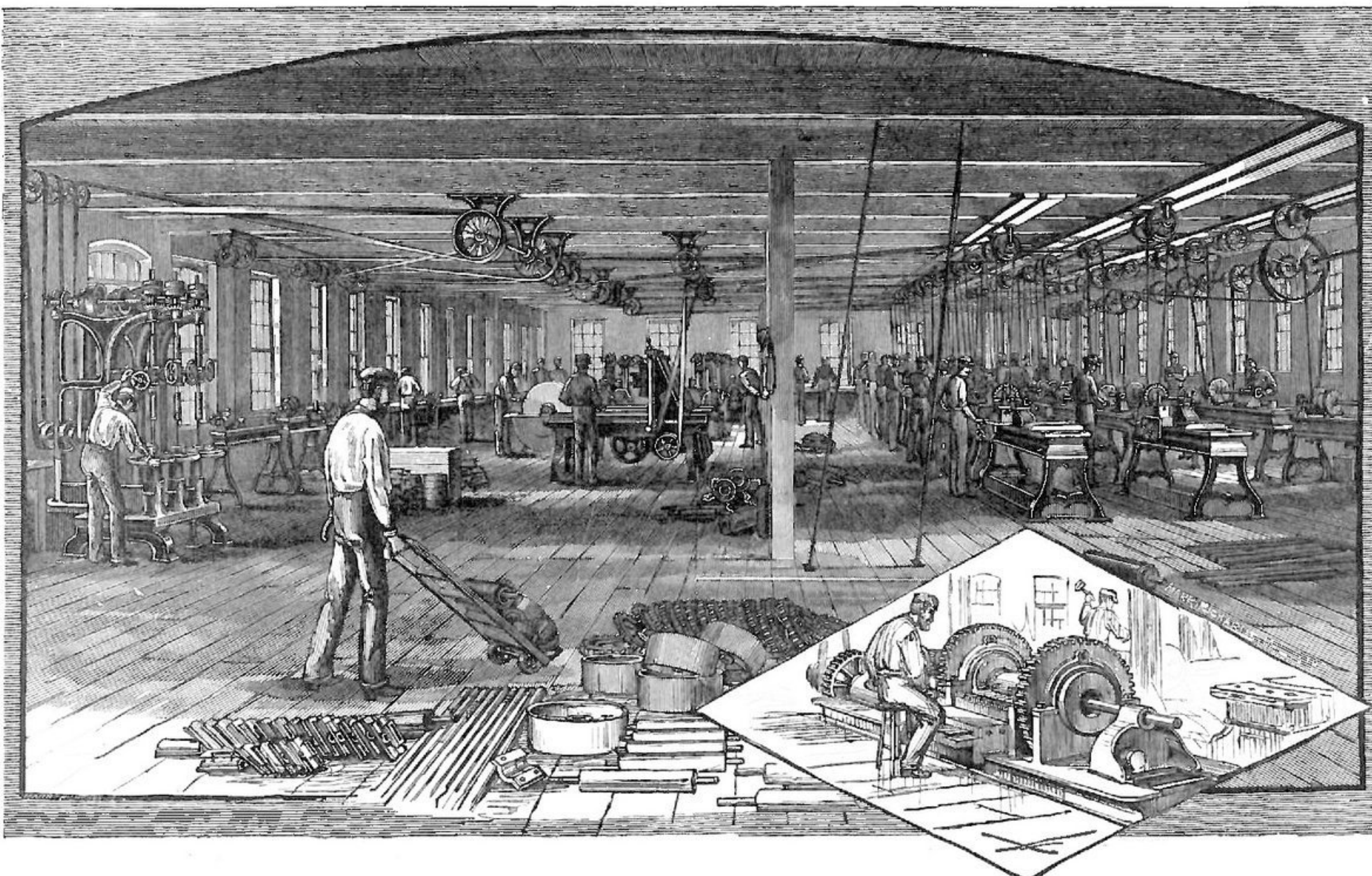
E. P. ALLIS & CO.'S ROLLER MILL SHOPS, "BAY STATE WORKS," MILWAUKEE, WIS.

of wood-working tools, of the most modern design. The east end of the building is used for the erection of bolting chests. The second floor is used for putting together the centrifugal reels, purifiers, break machines and other specialties manufactured by Messrs. Allis & Co. This shop, although very large and commodious, has been crowded to its utmost facilities to keep up with the demands upon it, and it will soon have to be doubled.

Separated from the carpenter shop by a brick engine room containing the power outfit, is the new machine shop, built in 1883. It is 60 feet wide, 230 feet long, and two stories in height, the same as the carpenter shop. The first floor is used for the saw mill department, one of the important branches of the establishment. Here is turned out saw mill machinery in great variety, including gang and circular saw mills, edgers, trimmers, carriages, set works, etc. The second floor is now used for special iron work, and for surplus work from the carpenter shop. The "Allis Mutual Aid Society," a benefit association organized by the employees of the works, has its office and reading rooms in this building. The



E. P. ALLIS & CO.'S ROLLER SHOPS, FIRST FLOOR.



E. P. ALLIS & CO.'S ROLLER SHOPS, SECOND FLOOR.

new shops and the old are connected by standard gauge railroad tracks, which reach all parts of the yard, and are connected with the side tracks of the St. Paul railway. Cars are switched to any part of the works by a dummy engine built and owned by the works.

Taken as a whole, the Reliance Works are well worthy a visit, and will amply repay the hour or so of time and the mile or so of walk necessary to go through them. Nearly five acres of floor space are under roof, every part of which contains something of interest. Large as they are now, new buildings and new machinery are being constantly added, and it becomes a question of much interest where the growth will stop. The plant here described does not include the roller mill shops, also owned by Mr. Allis, and really forming part of the Reliance shops. They have always been known as the Bay State Works, and will now be described.

Away back in the early days of Milwaukee, one William Goodnow, started a little machine shop and foundry at the corner of Florida and Clinton streets, on the site now occupied by the Cream City Iron Works. He met with fair success, and when the

Reliance Works were moved to their present location, impelled by a spirit of business rivalry, he projected the Bay State shops, his design being to have the best and most perfectly equipped machine shops in the west. Having secured the location at the corner of Lake and Barclay streets, he put up a three-story brick building, with engine room, blacksmith shop and foundry adjoining. The whole establishment was supplied with an extensive and complete outfit of tools, patterns, etc., and operations begun on a large scale. In a short time it was found that the works were far in advance of their legitimate trade requirements, and the institution became heavily involved and finally hopelessly bankrupt. After various ineffectual attempts to operate them by receivers and assignees, they were finally sold by the assignee, and were purchased, as a speculative investment, by Edw. P. Allis, owner of the Reliance Works, which at that time, as at the present, were doing a thriving business. The Bay State Works were suffered to remain idle for several years, and were then leased for a period to the Chicago, Milwaukee & St. Paul Railway Company, and were used as the company's repair shops. At the expiration of the lease the works were entirely refitted, and have since been used exclusively for the manufacture of the

Gray roller mills. The exterior of the Bay State Works is well shown by the accompanying engraving. The main building is of cream-colored brick, 260 feet long by 50 feet wide, and three stories high. This is the original shop. Adjoining it and fronting on Barclay street, extending from Oregon street, is a one-story frame building, 25x50 feet, which is used as a finishing shop and wareroom. The following interior views will serve to give an idea of the inside arrangement of the works as well as of their magnitude.

Passing through the main entrance and by the office, the visitor enters the first floor.

their appropriate machines, and all move together like clockwork. On this floor are also the lathes and grinding machines for fitting up the Wegmann's porcelain rolls, for which Messrs. Allis & Co. are sole agents in this country.

The third floor is occupied by the pulley lathes and grinding machines, and is used also as a store room for finished pulleys and other small parts of the machine. The whole building is now and has been for the past five years as busy as a bee-hive, the working forces averaging over two hundred trained mechanics, working solely on the Gray roller mills. Passing out of the main

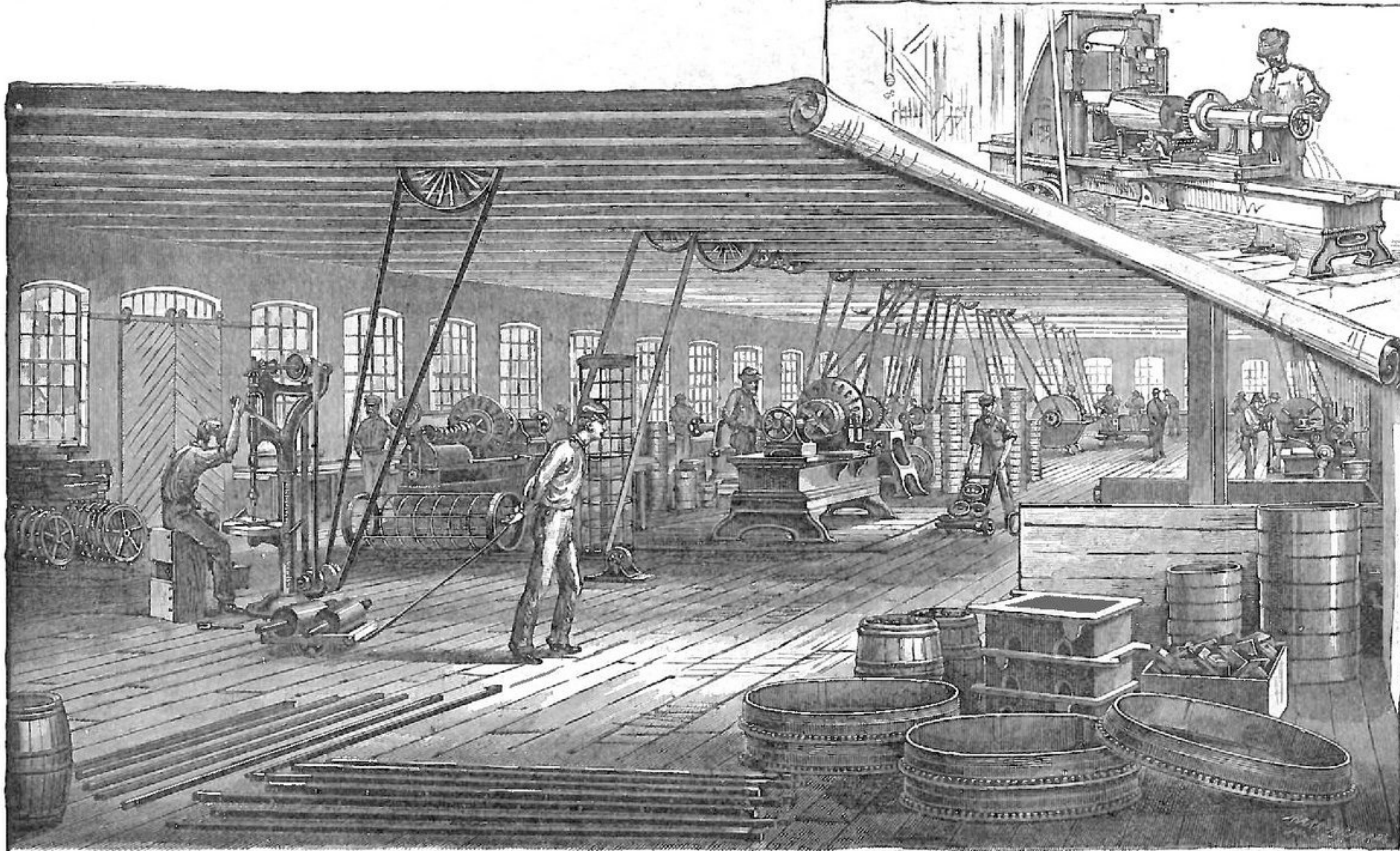
shipped from these works, going to all parts of America, as well as to England, Australia, New Zealand and South America. Taken as a whole, the Bay State and the Reliance Works plants fairly illustrate the magnitude of the milling industry, and are objects of interest to millers from all parts of the world.

THE BUDAPEST MILLS AND FOREIGN WHEAT.

The question of the wheats currently milled in Budapest was lately brought up in the Hungarian House of Deputies. A member regretted, during the course of a debate

the wane. Admitting that a certain quantity of Servian and Roumanian wheat found its way every year into Hungary, these stocks had been shown to be no more than the seventh of the flour exports of the country. As a matter of fact the greater portion of this foreign grain was never reduced in Hungary at all, but was merely warehoused pending its export to other lands. Their country was now, thanks to its railway system, becoming the storehouse and distributing agency for the trade of Eastern Europe, and it was perfectly natural that much grain should be received on its way west. Personally he believed the Budapest and other mills of Hungary used less foreign wheat than ever, and he concluded by remarking that what non-native grain might be used could not be supposed to injure the quality of the flour, inasmuch as the Hungarian millers were notoriously adepts in the art of blending, and might be safely trusted to manufacture high-class flour from wheats which in less skilled hands might give only second rate results. In his opinion it was precisely this mastery of the art of mixing that had placed Hungarian milling in the front rank, and had elevated it beyond the reach of competition.

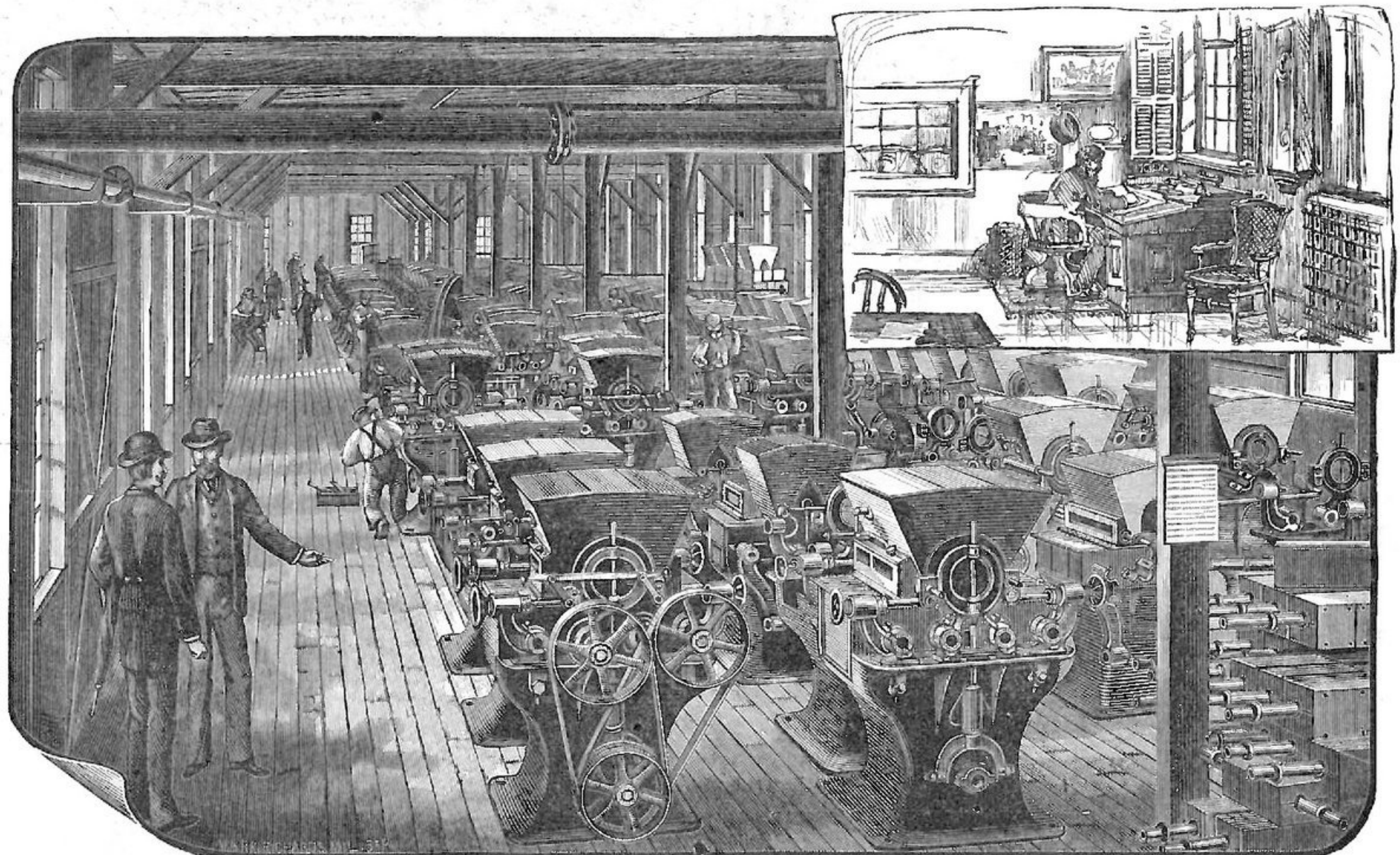
THE Dakota grain inspectors made very thorough investigations of the numerous complaints made as to transportation and grading of grain. The evidence showed that there were many abuses, but whether due to ignorance and want of judgment was uncertain, while willful extortion was not to any extent proven. The facts led to the recommendation of legislation on the matter. The subject of grading is an intricate one, and the board thinks that the best of codes would be valueless without an official and reliable board of appeals, which they advise should be created by the state, with sufficient intelligence, practical experience, and power



E. P. ALLIS & CO.'S ROLLER SHOPS, THIRD FLOOR.

Here the roller mill frames are brought from the foundry and are fitted for receiving the wooden hoppers and the minor details of iron work entering into the construction of the machines. This floor is well equipped with special tools, each designed with a view to doing a maximum amount of work with a minimum amount of labor. Special lathes, planers, drilling machines, etc., are all kept busily at work under the careful attention of skilled mechanics, each especially trained to do his stated share of the work of building the complete machine. On this floor also are found the special tools required for turning, grinding and corrugating the chilled iron rolls which are the prominent feature of all roller mills. Messrs. Allis & Co. have but recently turned their attention to the manufacture of the rolls themselves, and the works are not fully equipped with lathes for turning the chilled rolls. But a very small portion of the rolls are made here, the greater portion coming from Ansonia and Wilmington. The outfit of grinding and corrugating machines is the largest in the country, outside of the shops making a specialty of furnishing rolls only. The grinding and corrugating tools are all of the latest and most improved pattern, and the works have abundant facilities for handling not only their regular work, but also the large and growing roller repair trade. All possible pains are taken to insure perfection in workmanship, the result being that rolls are sent here to be refitted from St. Louis, Cincinnati, New York, Cleveland, Minneapolis, and other milling points, as well as from all parts of the country.

Ascending the elevator to the second floor, the visitor sees long lines of lathes, planers and drill presses, and the whole room thronged with busy workmen. This floor is devoted entirely to the fashioning of the smaller pieces of iron work required to complete the machine. Hand wheels, bolts, rods, levers, feed rolls, boxes, etc., each have



E. P. ALLIS & CO.'S ROLLER SHOPS, FINISHING SHOP AND WAREROOMS.

building on the first floor one reaches the finishing room. Here the machines are fitted with the necessary wood work, the feed rolls, and other small parts put in place, and the machines painted and prepared for shipment. At no time during the past three years has there been a single machine in stock, all being called for on orders as fast as completed. At present, notwithstanding the low prices of wheat and consequently depressed condition of the milling industry, the shops are over one hundred machines behind orders. First and last, during the past five years nearly fifteen thousand machines have been built and

on the Budget, that the mills of Budapest no longer confined themselves to native wheat, and had come to grind much foreign grain of inferior quality. This statement was at once traversed by Deputy Wahrmann, the reporter of the Budget, who declared that he could not allow a statement so misleading, and so calculated to depreciate the value of Hungarian flour, to pass unchallenged. One fact alone would preclude the idea that Budapest mills now habitually ground wheat of inferior quality, and that was the universal favor in which the flour was held, a favor which, he made bold to say, had in the last few years been on the increase and not on

to arrange the details of tables and grades satisfactorily to all reasonable parties. At the meeting of farmers at Grand Forks, Dak., a year ago a vast amount of testimony and affidavits were presented on the special cases of wrongs claimed to have been done by the elevator men. Much was found to have been trivial and contradictory; there was an evident incompetency in many cases on the part of the local agents. No charges were sustained of willful wrongs.

It is reported that a number of the farmers living near Battle Creek, Mich., will unite in the building of a flouring mill in that city.

ESTABLISHED 1856.

EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOUR BOLTING CLOTH

OVER 18,000 MACHINES IN USE.

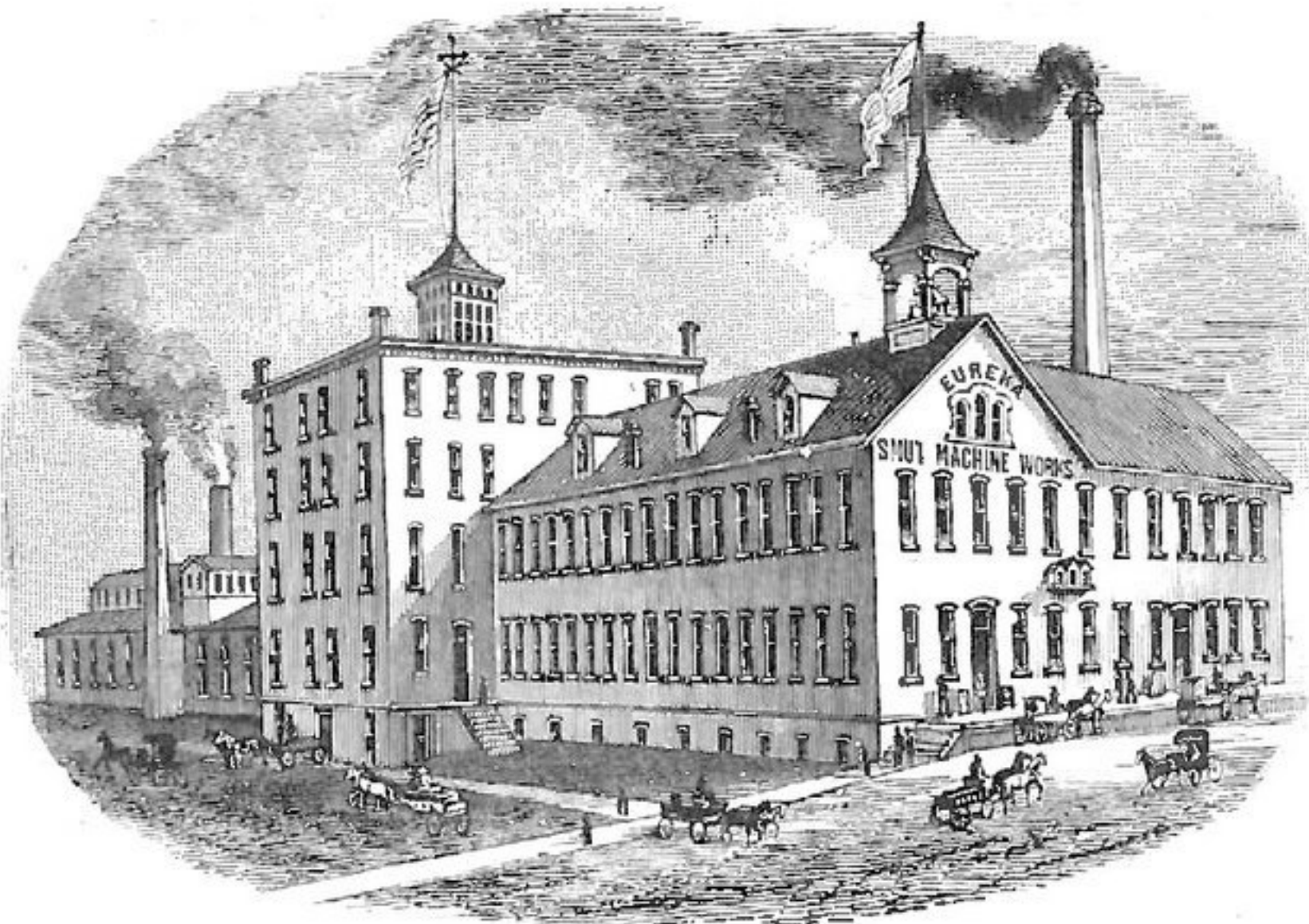
OUR LINE COMPRISES

The Eureka Separator,
The Eureka Smutter and Separator,
Eureka Brush Finisher,
The Eureka Magnetic Automatic Separator,
Silver Creek Flour Packer.

Our establishment is the oldest, the largest and most perfectly equipped of its class in the world, and our machinery is known and used in every country where wheat is made into flour.

HOWES & EWELL,
SILVER CREEK, N. Y.

European Warehouse and Office: 16 Mark Lane, London, E. C. Gen. Agency for Australian Colonies and New Zealand. Thos. Tyson, Melbourne, Victoria.



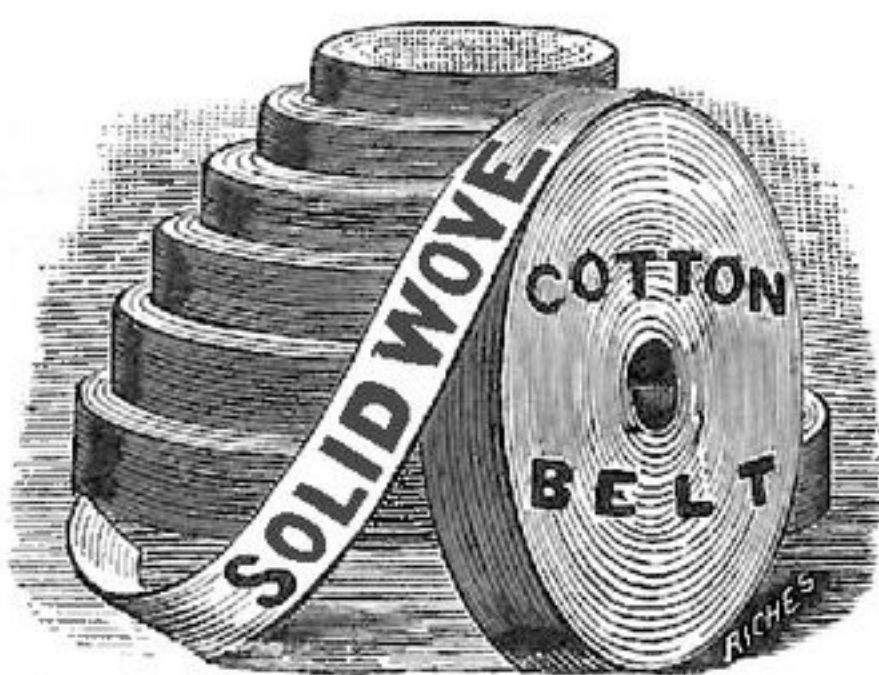
We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

ANCHOR BRAND BOLTING CLOTH.

Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

Send For Samples of Cloth, Our Style of Making Up, and Prices.

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**MILL SUPPLIES** { Everything Used in a Mill of Every Kind Always on Hand.

Leather
Cotton
Rubber

} **BELTING, BOLTING CLOTH**

ELEVATOR BUCKETS, BOLTS, MILL IRONS, &C.

Prices Close and Quality the Best.

The Case Mfg. Co., Columbus, Ohio.

ROLLS RE-GROUND

And Re-corrugated to order. Porcelain rolls re-dressed. Our Machinery for this purpose is very accurate. Can do work promptly.

Case Mfg. Co., Columbus, Ohio.

TOOL FOR CUTTING, LEVELING & POLISHING THE FURROWS & FACE OF MILLSTONES

Eight inches long, 2 1/2 inches wide, 1 1/2 inches thick. Received the highest and only Award given to Polishers at the Millers' Exhibition, Cincinnati, Ohio, June, 1880.

For facing down high places on the buhr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow, can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, \$3.50. Satisfaction guaranteed, or money refunded. Address



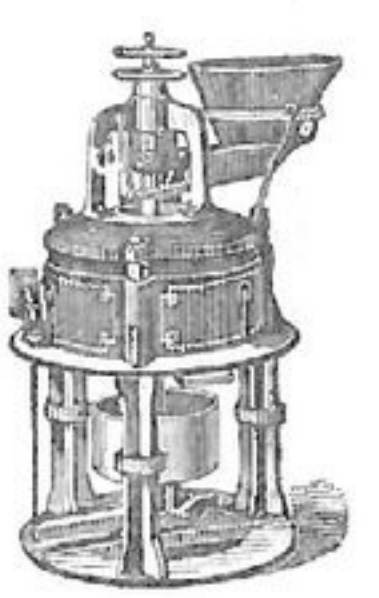
HORACE DEAL, - BUCYRUS, OHIO.

Exhibit at World's New Orleans Main Building, Columns G-G, Nos. 47 and 48. Space 15x25 feet.

Buckwheat Refiners & Portable Mills

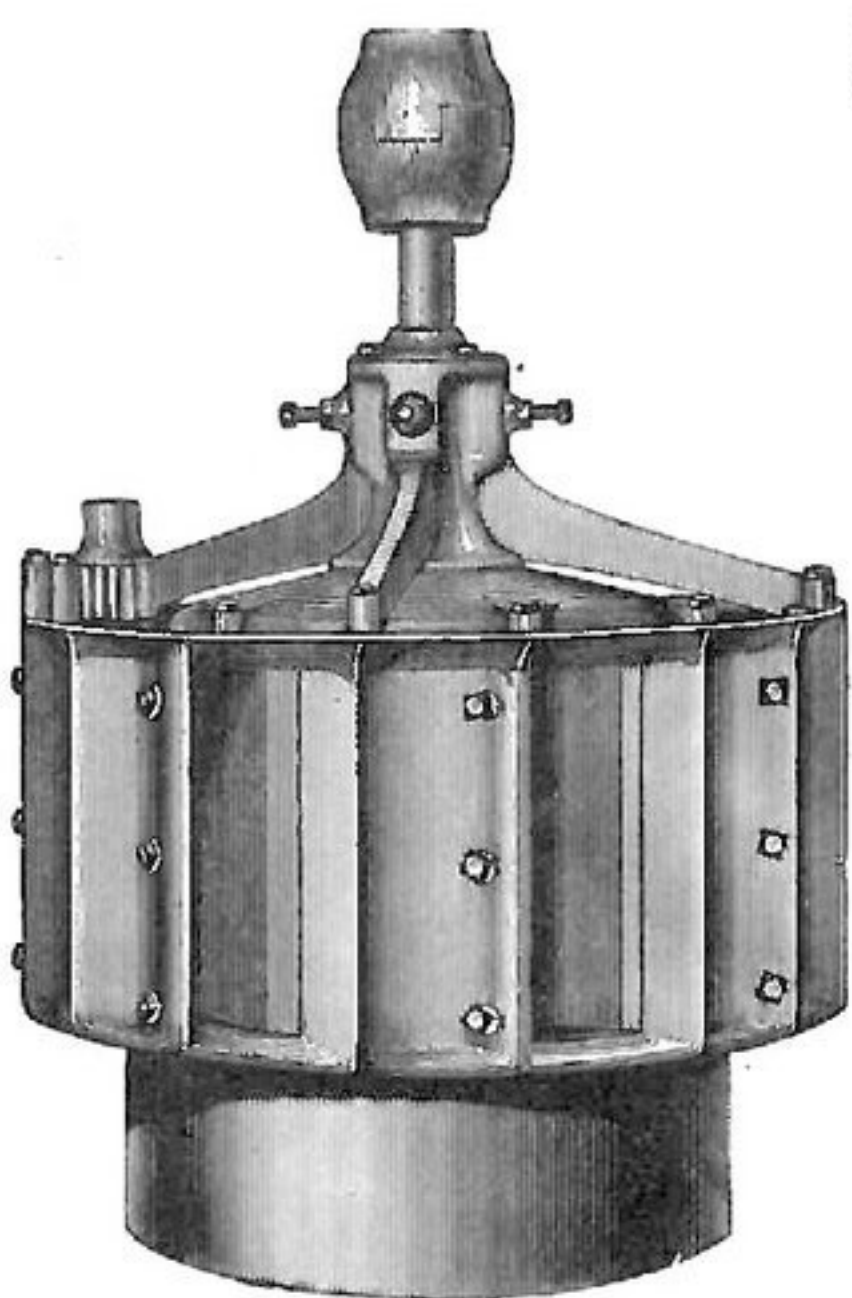
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Buckwheat Refiner
Is the only machine whereby the greatest yields of
PURE, WHITE SHARP FLOUR
can be obtained.
The only reliable, practical and durable machine
IN THE WORLD.

THE POSITIVE ADJUSTMENT
AND AUTOMATIC
MIDDINGS MILL
Is Strictly Self-Protecting
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Perfect Granulator
Grinds Cool, Self-Oiling, Great Saving of Power,
Simplicity and Durability Combined.



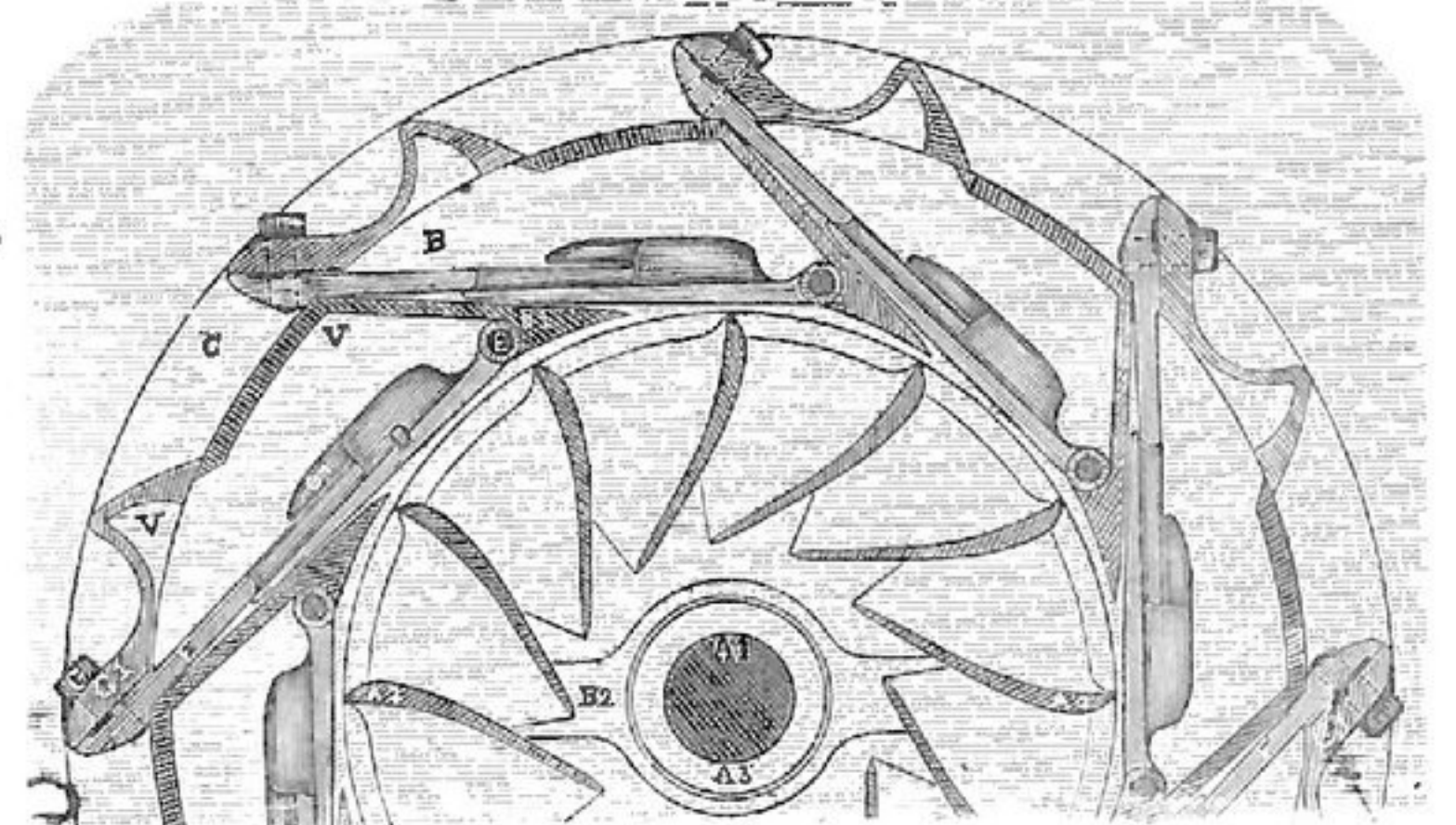
Satisfaction Guaranteed on all our Goods. Send for Descriptive Circular, giving Prices, Sizes, Terms, etc.

BREWSTER BROS. & CO. Unadilla, N. Y.

**THE KEISER -TURBINE-**

Has a combination of more good points than found in any other wheel. Yields the greatest power to be had from the water used, at all stages of gate and has a self-cleaning easy-working balanced gate that closes water tight.

WOLF & HAMAKER, CHAMBERSBURG, PA.



GATES CLOSED—WHEEL STOPPED.

This Fig. 4 shows the gates closed. All motion has ceased and water and wheel are at a stand still. The inside casing being nicely finished on its outer circumference and the outside casing carefully bored out to fit over it, make, with the heavy guides F fitted against the inside casing and bolted to the outside, a water tight gate which does not become leaky from use. It will be noticed that all the gates work together simultaneously, causing an even delivery of water all around the wheel at any stage of gate, and should anything ordinarily carried with the water, such as bunches of leaves, straw, twigs or sod, lodge in the chutes, by partially closing them such trash will be compressed and upon opening again carried through the wheel.

JONATHAN MILLS UNIVERSAL FLOUR DRESSER

Guaranteed to be superior to any other bolting device for clear, clean bolting or rebolting of all grades of Flour.

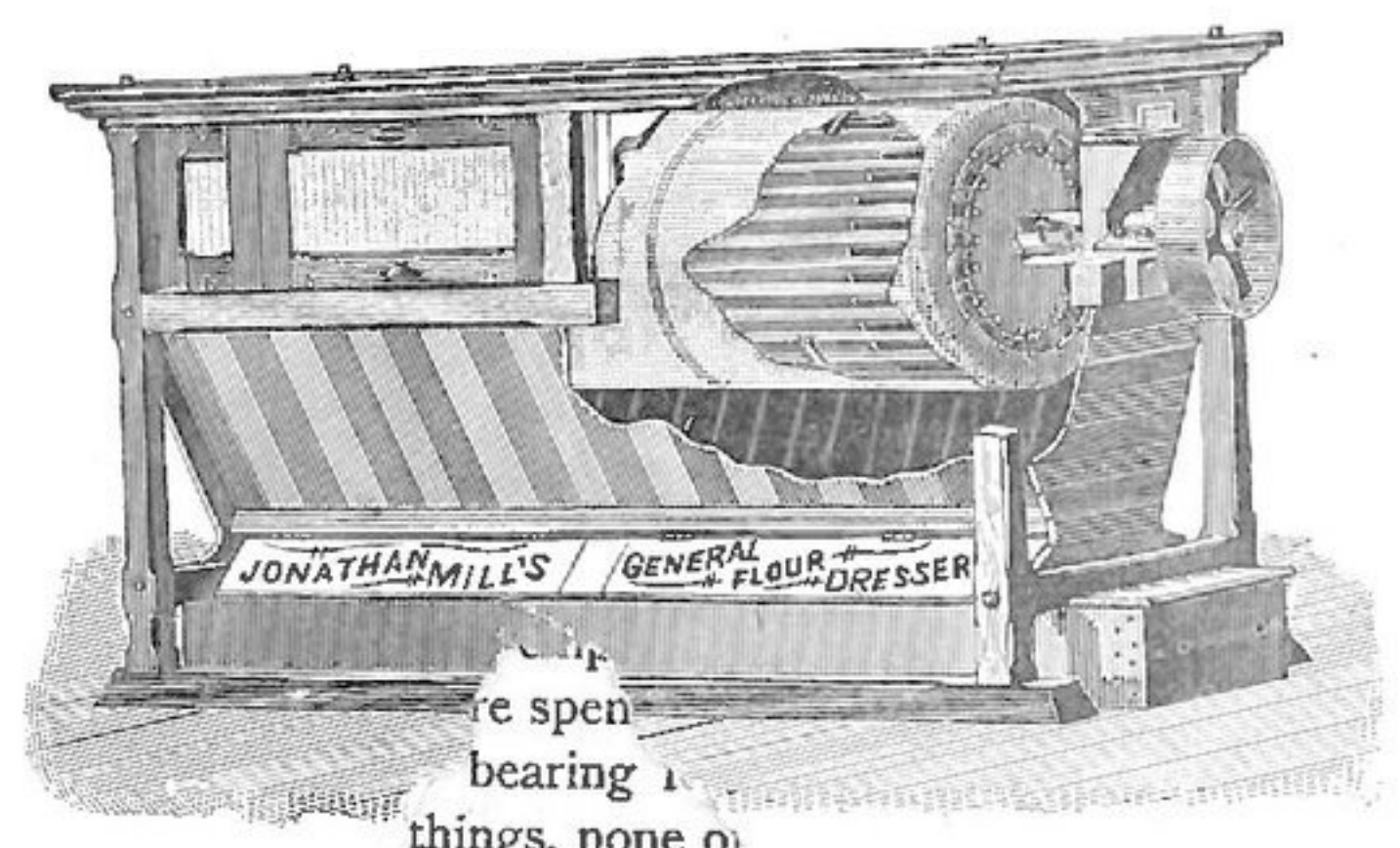
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SLOW SPEED. OCCUPIES SMALL SPACE, AND HAS IMMENSE CAPACITY.

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Send also for 150 Page Catalogue Describing their Engine





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In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; can be remitted by Postal order, registered letter, or New York Exchange. If currency is enclosed in unregistered letter, it must be at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

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ADVERTISING.

Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

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Readers of "The Milling World" will confer a favor upon the publishers, and derive material benefit themselves, by mentioning this paper when opening correspondence with advertisers. Drop us a postal card when you have written to an advertiser, give us his name, and then we will put you in the way of getting the benefit. Don't forget this.

NOTHING LIKE PROTECTION.

MONDAY, February 16, should be marked as a special day with regard to the protective policy of Europe against American competition. Bismarck, in defending his government's position to increase the grain tariffs, stated that its decision was determined by the effects of the protection given to the small farmer, and that the state could not wisely remove a tariff which would place all the small farmers at a disadvantage, while it benefited perhaps a few large land holders. On that day the increase of wheat from one to three marks wheels, bolts, etc., each have

the German Reichstag, and thus a long controversy about the justice or injustice of such action has been settled. As we stated last week, the increase of tariff on wheat is 200 per cent., but on flour only 66⅔ per cent., and the fears entertained by German millers that instead of wheat, America will send all flour after this, may yet be realized. On the same day the French ministry seriously discussed the advisability of protecting their agricultural interests against American competition, and their contemplated duties are so high as to practically exclude the import of American breadstuffs altogether. Our neighbor, the Dominion of Canada's government was waited upon, on the same day, by a deputation of the dusty fraternity, which also complained of inability to live under the constantly increasing pressure of American competition, and wanted their government to lighten their labors in this struggle for existence, by increasing the duty on American flour from 50 to 75 cents a barrel. This they consider essentially necessary in order to live, as over 500,000 barrels have been sent to the Dominion during the second half of the year 1884, showing an increase of 100 per cent. over the previous year. The dispatch from which we obtain this news states that the millers' demand will in all probability be granted. Thus the good work of protection goes on. Every country is making the most strenuous efforts to exclude other country's products which are cheaper than its own, for the welfare of those who manufacture the same things at home; and just as urgently as American manufacturers claim the need of protection against European articles produced at a cost cheaper than their own, European agriculturists demand a protection of their interests against cheap American foodstuffs. It is simply "tit for tat," and nobody should complain if the dose is bitter. Whether these protective measures will prove effectual, is another question; but as it is claimed and admitted on all sides that protection fosters home industry, at least in its earlier stages, there cannot be any doubt that the agricultural interests of Canada, France and Germany will derive an immediate benefit from the protective tariff, at least for the present time, no matter how injurious it may prove to many, and how inefficient it will prove to be in the end. The impulse given to European agriculture will undoubtedly be quite considerable, but whether the increased tariffs will be able to prevent competition in every direction is a question that remains to be determined in the future.

A PROPOSAL has been submitted to the International Postal Union to have the mails carry packages up to five kilogrammes weight, and that collections of drafts may be performed by the postal service.

As an illustration that prices of grain are regulated by the laws of supply and demand, a correspondent of the Cincinnati Price Current states that in 1884 corn sold in Nebraska at 11 cents per bushel, and wheat at from 25 to 50 cents, and wants to know whether either has ever been cheaper under a high, low or no tariff at all.

It has frequently happened that freight from the West for Europe has been delayed at New York, because consigned for a certain steamer, which had to sail without it, because the consignment did not arrive on time, causing confusion all around. This is to be avoided in future by the recent action of the transatlantic companies, who will after this, accept freight for certain vessels, when the freight is on hand in New York.

How certain quite insignificant telegraphic dispatches can be magnified into huge dimensions and used as a stimulus to a stagnant market, was shown in Chicago

last week. The statement that Russia had ordered guns from Krupp for use in Asia, was magnified to 40,000 guns, and was used as a suggestion of a possible war of that Empire with England. Prices of cereals in consequence, took an upward bound, of course, only for a short time, because the mistake was soon discovered; but the deception lasted long enough to give zest to the market and undoubtedly to allow a fair amount of money to change hands.

HEAVY transportation charges and the necessity for State or even National legislation for their regulation, have of late agitated the minds of many of our Western producers. It may be well to remember that these charges have decreased more than any other commodity in price. In 1868 a bushel of grain was carried by lake and canal from Chicago to New York for 25 cents; in 1882 for eight cents; all rail freight for the same distance was in 1868 forty-two cents; in 1882, fourteen, showing a reduction of 68 and 66⅔ per cent. respectively in these charges. For how many other things have the costs decreased at rates corresponding to these?

THE present winter ought to offer abundant facilities to the intelligent farmer for observing the effect of cold upon his crops when covered by a varying thickness of snow. While it is admitted on all sides that snow is a protection to the seed, the question whether too much of it can be injurious is open yet. Whether the possible injury is due to the snow itself, which seems hardly probable no matter how high the bank, or to the water resulting from it melting, would form an interesting line of observation to any one who lives in a grain-growing community favored with an abundance of snow and wind during the present winter, and the number of such localities is doubtless large.

FEARS are entertained by New York merchants that the water supply of both the Erie canal and the Hudson river will be endangered if the destruction of the Adirondack forest region is allowed to proceed at the present rate. Unfortunately the lumber interests wield a heavy power and if a popular vote was taken on the question at present, there cannot be the slightest doubt that a movement for the preservation of these forests would be defeated. Still the feeling of a necessity for some action or other is on the increase; the knowledge that the regularity of the water supply is endangered by the cutting of the trees at their head waters is spreading slowly, but surely, and as soon as the proposed legislation is supported by an intelligent minority of fair dimensions, the passage of a bill for the preservation of the Adirondack forests will be insured, in spite of the opposition of lumbermen. The Erie canal and the Hudson river are too important for the commercial interests of New York and agitation of the subject cannot be pursued too vigorously.

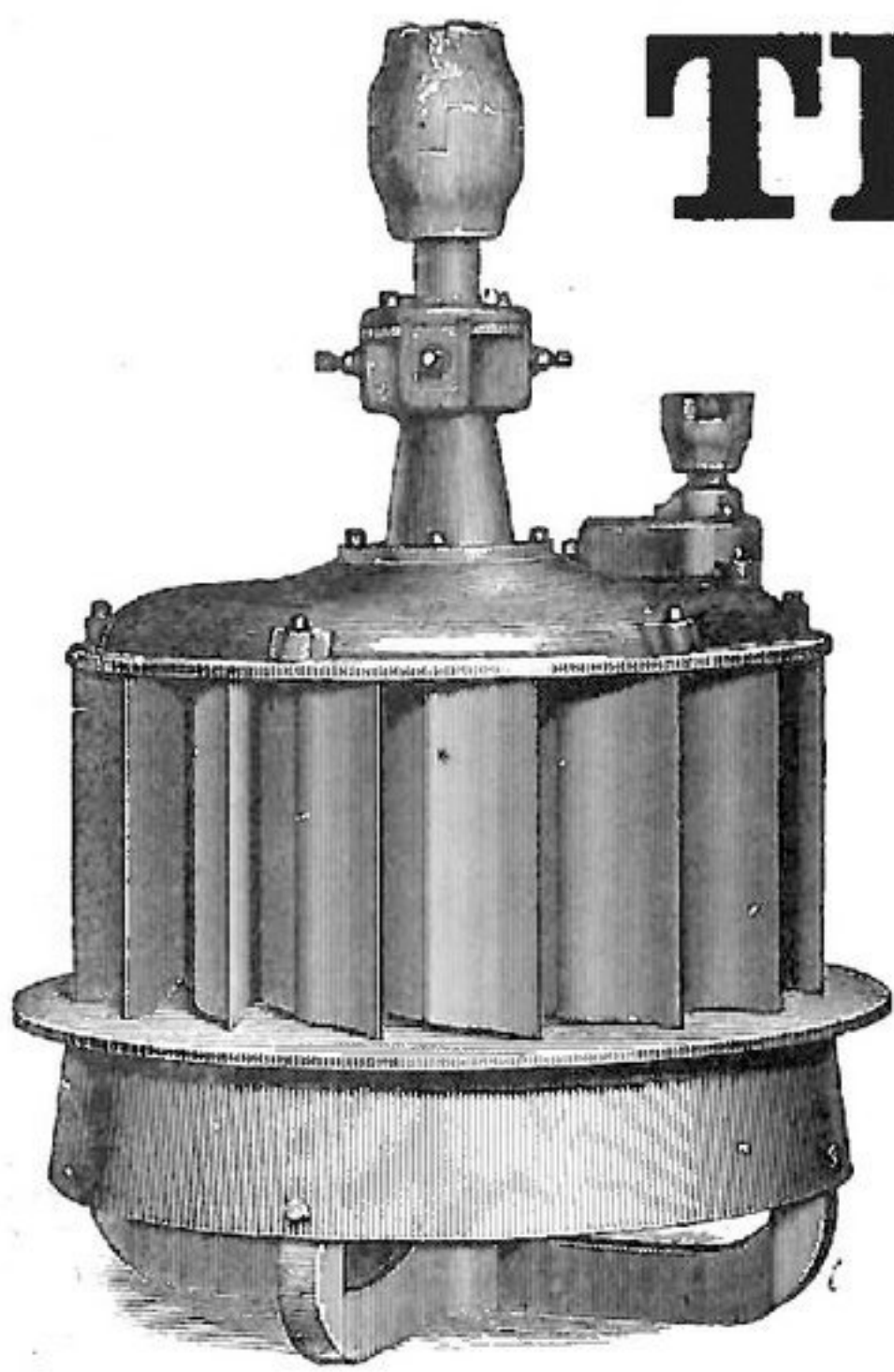
THE Chicago Tribune apparently hits the nail on the head in its characterization of the present business situation. It philosophizes as follows: We are now in a choppy sea, and the wind is a trifle crazy, not very strong and coming from no direction in particular. If one did not know what the country had gone through during the past three years, and how well it has borne the shocks it has received, would say that affairs are in a very unpromising condition; but knowing these things, we have every right to congratulate ourselves on the present stability of business and the prospect of a moderate improvement this year. Bad as trade is now called, it is in a much more healthy state than in 1880, when we had given ourselves up to such a speculative

mania and so large a proportion of the people were trading in stocks and commodities which they knew little or nothing about. And in spite of the set-backs we have had since the opening of the present year, the course of events has been even more favorable than we had any reason to expect, and justifies continued hopefulness.

AN interesting statement was recently made at the Buffalo Merchants Exchange, which at the same time suggests a query. It has been said that the railroads of the United States employ 1,250,000 men, and the question necessarily suggests itself is that large number necessary to transport the commodities of a population of about 56,000,000? In other words is about ten per cent. of the total male population of the United States railway employees, and if so, is not such a large number a heavy drain upon the producing capacity of the rest. A railroad employee is undoubtedly a producer to a certain extent as his services are necessary to increase the value of many of the products of the country, and yet the above figures seem to imply that a smaller percentage would be of more advantage to the country at large.

SOME very philanthropic people, actuated undoubtedly by the most human, if mistaken, impulses, are trying to have stock speculations and margin systems prohibited by law, and bills to that effect have been introduced into the legislatures of New York, Pennsylvania, Ohio, etc. These people evidently forget that speculation in some form or other has pervaded all classes of society to such an extent, that no law can prove effectual enough to change the whole current of popular understanding; the dividing line between speculative and so-called legitimate business in so diffuse and uncertain that another legislative act would be necessary to state where one ended and the other commenced. Nobody will deny that speculation in margins, etc., etc., has again and again resulted in untold injury to commerce, yet as long as the majority of the commercial community look upon it as one of the legitimate roads to wealth, and as long as all, or nearly all, pay homage to the most successful speculator, legislative prohibition will prove a failure. The demand for it must exist before such a law can be effectual.

THE cry of excessive elevator charges at the terminal ends of the Erie canal are agitating the minds of the grain merchants of the Empire State. The canal boatmen have taken the initiative and are determined to have this matter of charges thoroughly ventilated. Thus the boatmen claim that the actual charge for transferring grain is equal to \$7.50 per 1,000 bushels in Chicago, while \$14.50 are collected for the same quantity in Buffalo and \$17.00 in New York City. They state that the aggregate port charges in the two latter cities are ruining the canal commerce, amounting, as they have done the past summer, to 5¼ cents per bushel, or about 1¼ cents more than the boatmen received for carrying the load 500 miles. As a matter of course, the elevator men are opposing any legislative action in this matter, and state that if the bill proposed by the boatmen should pass the legislature, they will close their elevators as unprofitable, and look for investments for their capital that will pay better. Unfortunately the public has never had any actual knowledge of the dividends paid by the different elevators, and therefore will be inclined to give the benefit of the doubt to the boatmen. That the bill will be hotly contested on both sides is, beyond question, although the probability is that it will be defeated, like its predecessors, by the immense pressure that will be wielded against it by the different produce exchanges.



THE VICTOR TURBINE

Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as Shown in the Following Tests at Holyoke Testing Flume:

Size Wheel.	Head in Ft.	Horse Power.	Per Cent Useful Effect
15-inch.	18.06	30.17	.8932
17½ in.	17.96	36.35	.8930
20-inch.	18.21	49.00	.8532
25-inch.	17.90	68.62	.8584
30-inch.	11.65	52.54	.8676

WITH PROPORTIONATELY HIGH EFFICIENCY AT PART-GATE.

Such results, together with its nicely-working gate, and simple, strong and durable construction, should favorably commend it to the attention of ALL discriminating purchasers. These Wheels are of very Superior Workmanship and Finish, and of the Best Material. We also continue to manufacture and sell at very low prices the

ECLIPSE DOUBLE TURBINE,

So long and favorably known. State your requirements, and send for Catalogue to the

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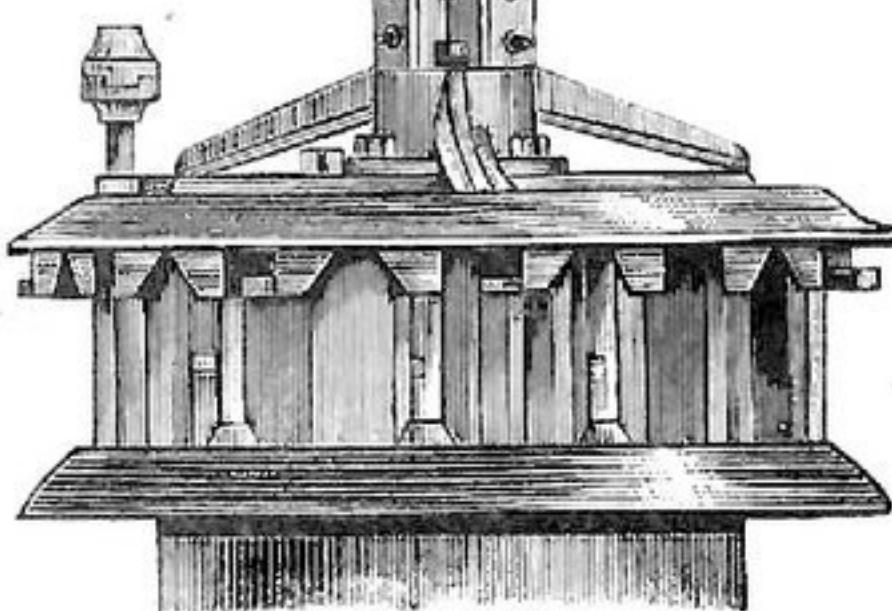
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THE CHEAPEST AND THE BEST FOR HOT & COLD WATER. \$35.00 AND UPWARDS. SEND FOR CATALOGUE.

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THE IMPROVED "SUCCESS"

PERCENTAGE: THIS WHEEL IS BOTH DURABLE AND CHEAP.

Full Gate,....	86.29
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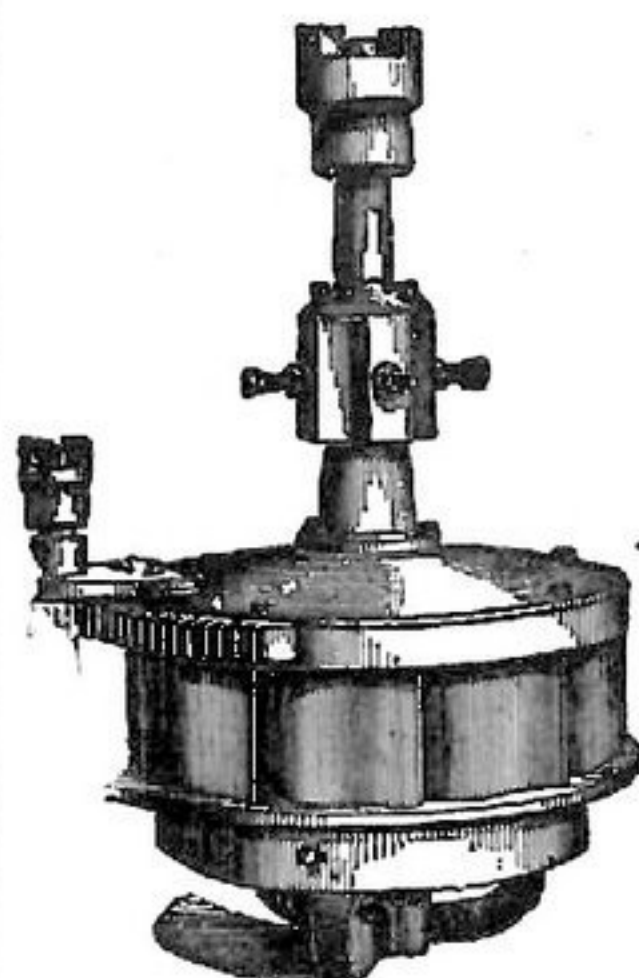
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WATER WHEELS AND MILLSTONES.
Best and Cheapest in the world. Manufactured by A. A. DeLoach & Bro., Atlanta, Ga. Every farmer can now afford a Grist Mill. Sixty four page Catalogue free.

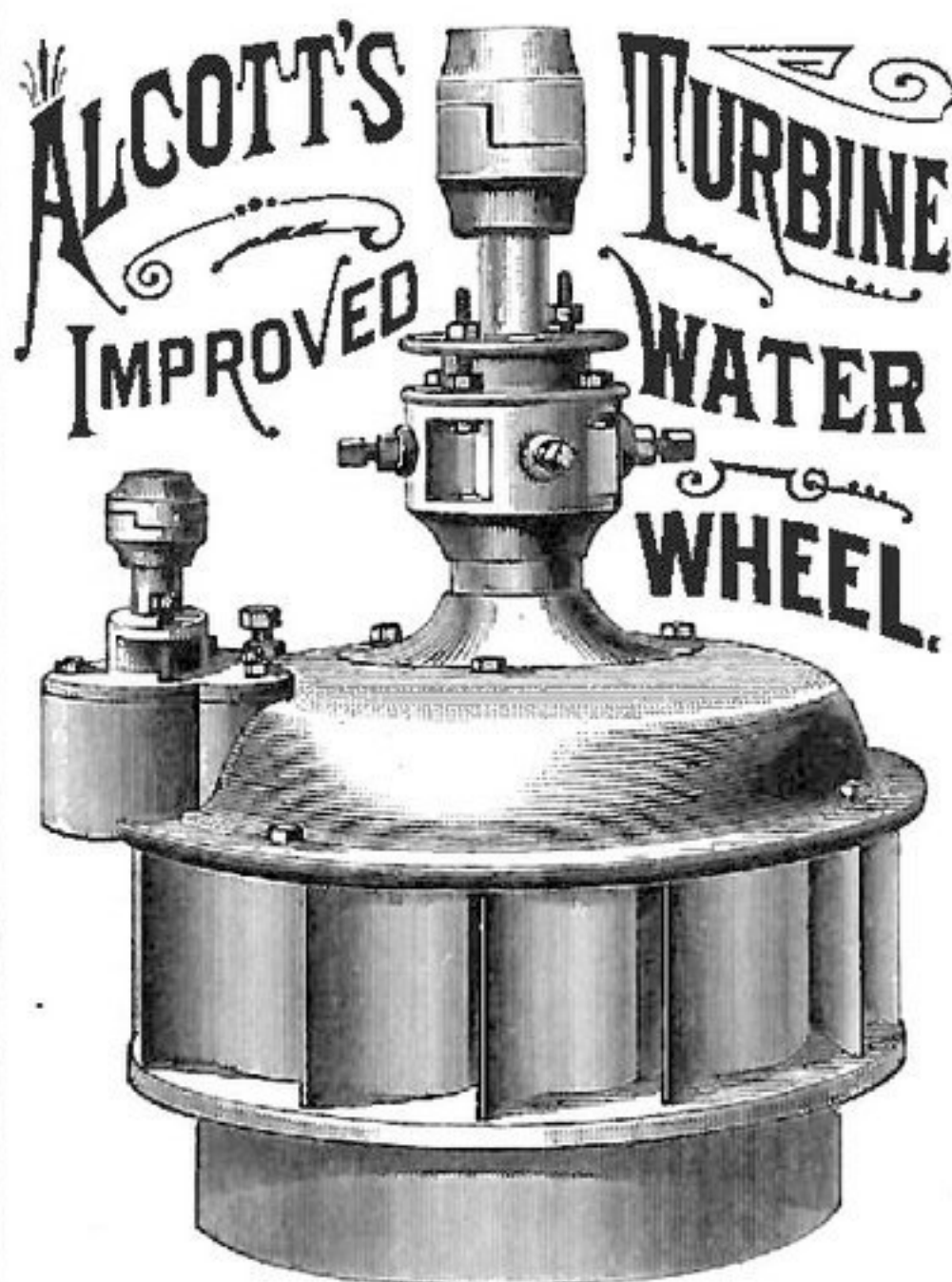
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Simple, Durable, Strong Gate Works EASILY —AND— RAPIDLY. PERFECT Satisfaction —IS— GUARANTEED.

W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.



ALCOTT'S IMPROVED TURBINE WATER WHEEL.
This Wheel gives high results, and is acknowledged the best, most practical and efficient Turbine made. For Simplicity, Durability, and Tightness of Gate it has no equal.

State requirements and send for Catalogue to
T. C. ALCOTT & SON,
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BURNHAM'S IMPROVED Standard Turbine

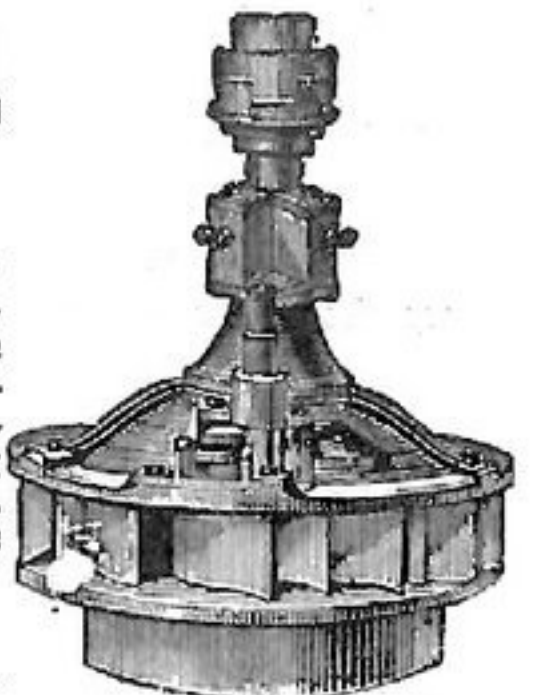
IS THE Best constructed and finished, gives better Percentage, more Power, and is sold for less money, per horse power, than any other Turbine in the world. New Pamphlet sent free by



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MERCER'S RELIABLE Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list. **T. B. MERCER,** WEST CHESTER, PA.



POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

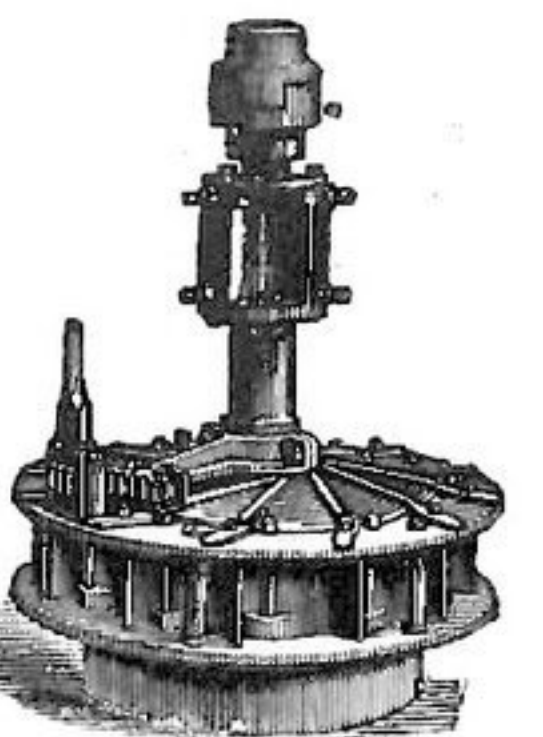
From 1 to 20 feet diameter, of any desired face or pitch, moulded by our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

Of the Latest and Most Improved Designs.

Engines, Boilers, Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.



POOLE & HUNT, BALTIMORE, MD.

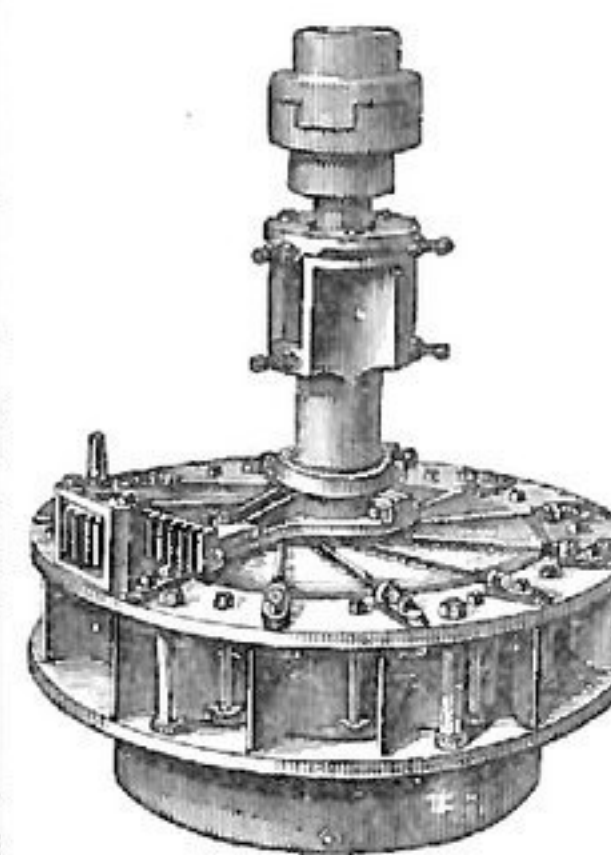
LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

MOST PERFECT TURBINE NOW IN USE.



Comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this Country. Our new Illustrated Book sent free to those owning water power.

Those improving water power should not fail to write us for New Prices before buying elsewhere. New Shops and New Machinery are provided for making this wheel. Address

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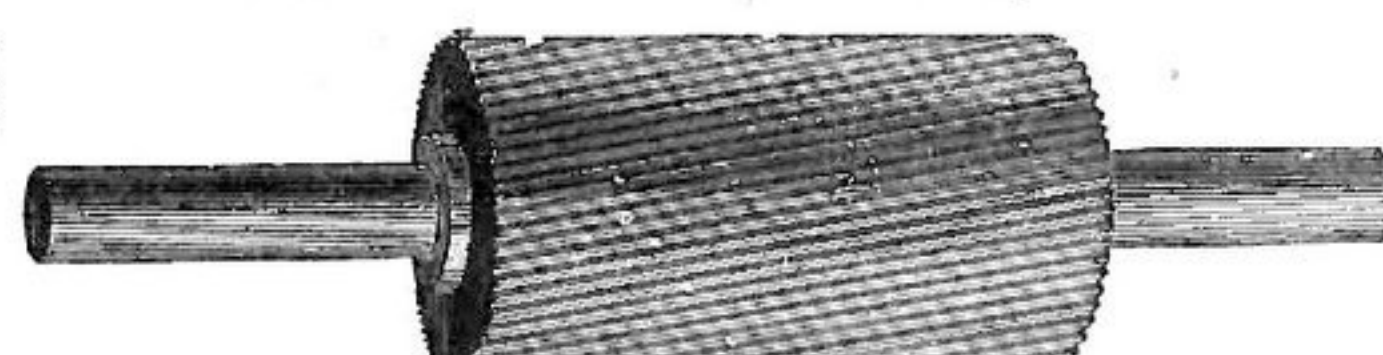
Manufacture a Complete Line of

FLOUR MILL MACHINERY,

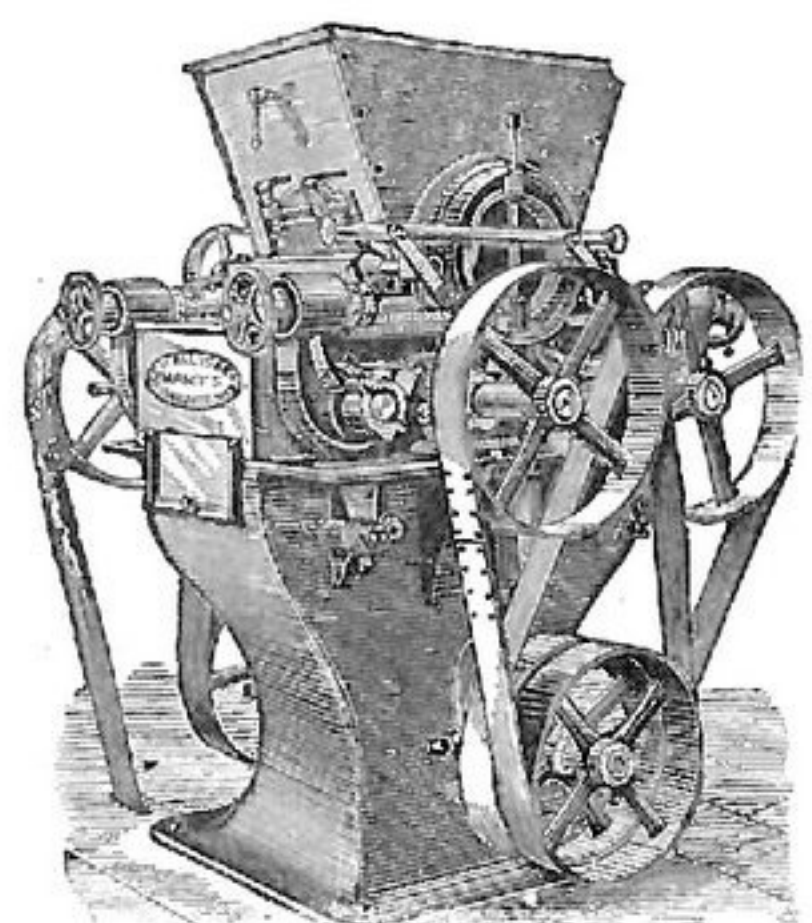
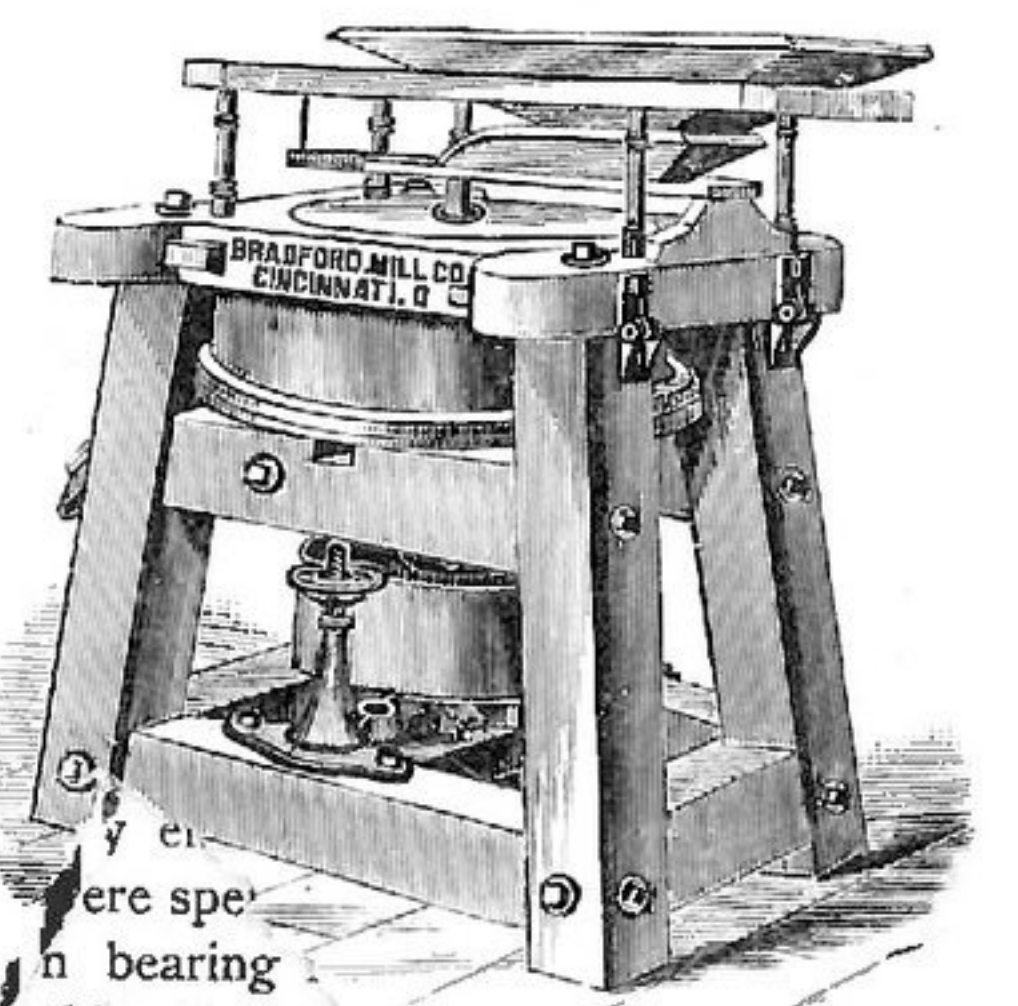
Including Portable Corn and Middlings Mills.

RE-GROUNDING AND RE-CORRUGATING

PORCELAIN ROLLS RE-GROUND.



CHILLED IRON ROLLS Re-Ground and Re-Corrugated.



EIGHTH AND EVANS STREETS, - CINCINNATI, OHIO,



Notes from the Trade.

John L. Hurst, of Mouse Creek, Tenn., has completed his grist mill.

Keisling Bros., of Nettle Carrier, Tenn., are about to build a flour mill.

The New Ulm, Minn., mill has just had a new 100 horse power engine placed in it.

Rogan & Lambertson, of San Saba, San Saba Co., Tex., expect to change to the roller system in the spring.

J. A. White, Oxford, N. C., has purchased ground on which to erect a flour mill; will put in latest machinery.

The Burlington Lumber Co., Burlington, Iowa, are putting in a 75 H. P. Westinghouse Engine in their new Saw Mill.

A company with a capital of \$50,000 has been incorporated at Louisville, Ky., for the manufacture of cornmeal and hominy.

At Royal Centre, Cass co., Ind., Feb. 11, Davidson & Dill's steam flouring mill burned. Probable loss, \$6,000 to \$8,000, with \$4,000 insurance.

Henck's Opera House at Cincinnati, will shortly be lit by electricity, the power being furnished by a Westinghouse Automatic Engine of 60 H. P.

Old and trustworthy farmers think the wheat crop of Kentucky will prove to have been practically ruined by the bad weather of this winter.

J. E. Hart, of Jacksonville, Fla., has decided to rebuild his mill, which was burned some months ago. The new mill will be a duplicate of the old one.

O. Hammond Jr., of Baltimore, Md., wholesale dealer in fresh meats is putting in a 400 light, Edison Plant and Ball automatic cut off engine to drive it.

At East Brookfield, Mass., Feb. 17, the box-shop, grist mill and pottery of G. Forbes was burned. The loss is about \$3,000; said to be fairly insured.

A. J. Patterson, of Union Depot, Tenn., is erecting a fine flouring mill at Home Depot, East Tennessee, with a capacity of 1,000 bushels of wheat per day.

The United States Electric Light Co. have secured the contract for lighting the Washington Monument. The power will be a 25-horse power Westinghouse engine.

There is said to be a good opening for a flouring mill at Newton, N. C., and that parties with capital (and experience in the business) could undoubtedly do well there.

B. H. Bartol, of Philadelphia, is arranging to run his Centrifugal Dryers by independent power, and has purchased a 60 H. P. Westinghouse Automatic Engine for the purpose.

The new Montezuma Hotel at Las Vegas, New Mexico, is putting in the United States Incandescent Lights to be run by two 50 H. P. Westinghouse Automatic Engines.

S. C. Hurt & Sons, proprietors of the "Piedmont Mills," Lynchburg, Va., are making improvements in their corn mill, putting in two single frames 12x24 rolls, and two double frames 9x18 rolls.

C. E. Marks, of Flint, Mich., is building a fast pleasure boat to run on the lake. It will be driven by a new style high speed Marine Engine built by The Westinghouse Machine Company, of Pittsburgh.

The "Athens Mills," Athens, Tenn., are about to put in rolls. The mills they will use are being built by J. H. Smith & Son, of the same place, and are the first roller mills that have ever been built in the state.

At Stony Point, Cumberland county, Va., Jan. 12, the flour mill of "Nat" Palmer, burned, with a large quantity of flour and grain. The loss is \$10,000. The fire is supposed to have been of incendiary origin.

The shipment of wheat by sea from San Francisco for the month of January was 2,648,803 centals (4,414,671 bushels), valued at \$3,535,132. Total shipments since July 1, 1884, 10,520,597 centals—17,534,328 bushels.

Cummer & Cummer, Lumber Manufacturers, of Cadillac, Mich., have purchased a Huyett & Smith Double Exhaust Fan for their Planing Mill, which will be run independently by a 10 H. P. Westinghouse Automatic Engine.

The Lockport Paper Co., of wheels, N. Y., have nearly completed their new mill, etc.

setting up the machinery. The Pusey & Jones Mfg. Co. furnish the cylinder machine, which will be driven by a Westinghouse automatic engine.

Nordyke & Marmon Co., of Indianapolis, Ind., wish to retract the statement made in a recent issue of this paper, that W. S. Myers & Bro., of Westminster, Md., had contracted with them for the remodeling of their mill to the roller system.

The Arcade flour and feed mill, located at the corner of Hasbrouck avenue and Mill street in Kingston, N. Y., was destroyed by fire a few days since, involving a loss of \$25,000, on which there is an insurance of \$17,000. The mill was owned and operated by Alva S. Staples.

The town of McCook, Red Willow county, Neb., is in want of a good flouring mill. There is good water power for driving the mill, plenty of grain, and a large home demand for flour. The town is situated on the Burlington & Missouri River Railroad, and promises to be a growing business center.

The Westinghouse Machine Company of Pittsburgh, Pa., are sending a good many engines to Europe, mostly to England and Holland. Among recent orders are a 15-horse power automatic engine for the British Admiralty, and a 9½x9 engine which will drive the electric lights in the South Kensington Museum, London. This latter engine is to run at 550 revolutions per minute. Orders of this nature for special service are very flattering to American mechanics.

Messrs. Westinghouse, Church, Kerr & Co., contracting engineers, of New York, have just closed a contract with Arbuckle Bros., coffee dealers, of New York, which will be an example of bold engineering. The contract is for four engines of 125 H. P. each, to be placed and run on the 6th floor of the large coffee roasting establishment of the above firm in Brooklyn. The building is especially designed for the support of heavy engines, and in the hands of the above firm of engineers there is no doubt that the plant will prove a marked success.

The British Agricultural Department has done some really useful work by publishing an account of the yield of the principal crops in Great Britain, in 1884. This is given in a specially prepared book, with a map showing the divisions of the country, agriculturally speaking; and not only is the produce in bushels given, but the acreage and the yield per acre, and the average of the past ten years, estimated of course. It is a noticeable fact, that previous commercial and non-official estimates of the crops have been very approximately correct; for instance, the yield of wheat is estimated by the Department at 10,027,000 qrs. in Great Britain, whilst by private sources in Sept. last, it was estimated at 10,000,000 qrs.

The foreign shipping of American grain in American ships makes a poor showing in our grade freights, as compared with foreign ships, making an immense transferral of our payments for our breadstuffs from our industrial classes to those of other nations. During 1884 this country transported of our grain exports some 69,345 bushels in two sailing vessels. England carried from our ports over 25,000,000 bushels in 654 vessels; Germany, nearly 6,450,000; Belgium, over 5,000,000; France and Holland came next. Most of this carriage is done by steam, these vessels having taken last year of wheat over 28,000,000 bushels; of corn, nearly 9,800,000; rye, 5,000,000; oats, some 2,500,000, and of barley a little over 65,000 bushels.

The Westinghouse Machine Company, Pittsburgh, Pa., report trade as opening remarkably active in 1885. Their sales for the month of January were 67 engines, aggregating 1,752 H. P., which is certainly good for hard times. The Electric light industry still continues to furnish plenty of business. Besides a large number of engines for lighting private establishments, they have contracted for the following public stations: The Newton Electric Light Co., of Newton, Iowa, one Westinghouse Automatic Engine of 35 H. P.; the Champion Electric Light Co., of Springfield, O., two engines of 60 H. P. each; the Excelsior Electric Light Co., Port Huron, Mich., one 60 H. P. Westinghouse Automatic Engine; the Northwestern Electric Light and Power Co., of Omaha, Neb., one engine of 45 H. P.; the Western Electric Light Co., Lexington, Ky., one 80 H. P. engine, being the second one within two years; the Brush Electric Light Co., of Buffalo, N. Y., also order two more engines of 65 H. P. each, making twelve Westinghouse Engines in all which are running in their principal stations.

Very quiet but effectual work has been already done by the officials of the Lake Superior and Union Improvement elevator companies. Men and money have already been called into use for the two immense elevators to be built by these companies immediately. Plans for both are well under way in the Chicago office of Moulton &

Son, who will build the houses. Contracts for some 6,000 long piles have been let, and timbers are now being hauled to the ground. Additional land has been bought at Rice's Point by the Union Improvement & Ele. Co., and a large increase of track room is being laid out to accommodate their proposed building. Bids have been asked for lumber, iron, etc., necessary for both houses and, by the way, the two will require in round numbers some 10,000,000 feet of timber, which will materially reduce the surplus lumber and logs in the Duluth district. When the Union Improvement Co. first decided to build a third house the capacity was put at 1,000,000 bushels but, the *News* is glad to say, they have since enlarged these figures, and the plans now under way are for a capacity of 1,250,000 bushels and it is more than probable that it will be made a full million and a half, as the company sees the necessity for an enormous increase in storage capacity. The Lake Superior Elevator company adheres to its original plans of a capacity of 2,500,000, so the total capacity of the two immense houses may be an even three million bushels. As soon as the plans are so far finished that the location of piers can be decided upon, active work on the foundations of both buildings will be commenced and pushed as rapidly as possible, and as there will be but little machinery in either house both will be ready when the crop of 1885 begins to pour in its stream of grain next September. Probably 500 or 600 carpenters alone will be employed on both buildings. When these houses are complete it can be said with entire truth that no other city on this side the Atlantic has so large a group of immense elevators; in other words, there is no city that can store in five houses a total of 6,300,000 bushels. Duluth's entire grain storage capacity will be in six months, including temporary storage houses, 9,400,000 bushels.

Says the *Farmers' Tribune* the prospects for the 1885 wheat crop are of a character which should encourage the farmers of the northwest. The great world crop of 1884 will not be repeated, nor will the prices of 1884 ever again confront the wheat-growers of this generation. The present and recent depressed condition of the market has been produced by the coincidence of four facts. First, a year of unusual and world-wide industrial stagnation, which has curtailed consumption and decreased the demand for food products. Second, the recent opening up of new areas of wheat lands, furnishing unadjusted elements of competition in the grain market. Third, an almost unprecedented bountifulness of the yield in all portions of the world. And fourth, new and improved facilities for calculating the crop and controlling its movement at the great central markets, thus bringing different wheat-growing regions into more perfect and immediate competition. The past year has been characterized by an actual over-production, and an actual under-consumption of breadstuffs. The remedy, of course, will work itself out automatically. Reviving trade and industry promise a year of normal demand and consumption of breadstuffs. Unprofitable prices are always a prompt cure for overproduction. The crop of 1885 will be decidedly smaller than that of 1884, the consumption will be decidedly greater, and the prices will advance correspondingly. Some time ago the *Tribune* called attention to the marked decline of acreage in England, as shown by the statistics of the fall sowing, and attention has also been called to the falling off in acreage of the winter wheat regions of our own country. It is now reported that Kansas, which is one of the chief wheat-growing states of the country, has sown 30 per cent. less area for the crop of 1885 than for that of last year. Illinois, also a great wheat state, is 15 per cent. short. Missouri falls off ten per cent. Ohio, Indiana and New York have considerably curtailed acreage. Virginia reports a shortage of 30 per cent. compared with the previous year; Maryland, 25 per cent; Tennessee, 20 per cent; Kentucky, 10 or 15 per cent, and various other states make similar showings. Evidently, the regions which grow spring wheat have an advantage, inasmuch as they can better forecast the market, and can permit acreage to depend somewhat upon the prospects. Judging from the present outlook, the northwest cannot make a mistake in planning for a great crop of wheat the coming season. The crop of 1884 amounted to 500,000,000 bushels in the United States. There is no reason to believe that it will greatly exceed 400,000,000 bushels in 1885. It would be superfluous to suggest that this fact means good prices. That the northwest cannot afford to depend wholly upon one crop, and that it needs diversified farming as a protection against off years, is perfectly true. But it is also true that wheat is to remain the chief crop of the northwest, and that no other region can grow wheat of so desirable a quality at so small a cost. The crisis in the market has proved one thing beyond all gain-saying, and that is the superiority of the northwest over competing grain districts.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

Wanted by a good practical miller a permanent situation, in a small merchant or custom merchant mill. Married man. Has had life experience. Can come April 1st. Good reference. Apply, stating wages given, E. R. HUGHES, Waterville, N. Y. 1517

SITUATION WANTED.

By a first-class miller to take charge of a custom and merchant mill, or will rent small custom mill. New York State preferred. For further particulars address MILLER, Box 72, Bradford, N. Y. 1818

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 60 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

WANTED.

Traveling salesman, must be a man of experience. Address, GILBERT & JONES, Jamestown, N. Y. 1814

WANTED.

A young man who has had about one year's experience in a Buhr stone flour mill. Must have good reference. Address, W. H. X., McElhattan, Clinton county, Pa. 1720

YOU CAN BUY THESE CHEAP.

Three McCully Corn Cob Crushers. The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 30, care THE MILLING WORLD, Buffalo N. Y. 11

I HAVE

650 Elevator Cups, 4½x3½, 700 Elevator Cups, 4x3, For which I have no use, and will sell cheap. They were made by W. P. Myer, of Indianapolis, Ind., and are entirely new. If you want a bargain write me. Address, J. S. K., care THE MILLING WORLD, Buffalo, N. Y. 11

FISKE'S BOLTING REGULATORS

Keep the bolting cloth clean in all kinds of weather and in handling all kinds of stock. Increases the bolting capacity from 25 to 50 per cent., and prevents making specky flour. No shafting, belting or gearing required. Any one can attach it. I have a few of these devices which I will sell cheap. They are brand new. Send for description and price. Address MILL-WRIGHT, care THE MILLING WORLD, Buffalo, N. Y. 11

PARTNER WANTED.

To remove the machinery of a new three-run mill to a site in a splendid wheat country in northwest Nebraska, with a view to adding new process machinery and elevator. The water power is completed, supplied by springs and not subjected to floods. Mill can be built near railroad track, with the Black Hills and the Northwest for a market. A splendid chance for a man of ordinary means. Address, A. R., care of MILLING WORLD. 18

PUBLIC SALE.

On Friday, March 13th, 1885, I will offer at public sale on the premises, the Washington mills, consisting of grist mill, saw mill, three dwelling houses, stable, carriage house, and about fourteen acres of land and good water power. Situated on the Little Miami river, six miles west of Xenia, Greene county, Ohio, two miles east of Bellbrook, where the great celebrated magnetic springs is; handy to post office, schools, churches; in a good wheat growing neighborhood. Terms of sale one-half down, the remainder in one year at six per cent. interest. Address, JOHN STRAIN, Assignee, Springfield, Greene Co., Ohio. 16-19



HOW DOES THIS SUIT?

"Cooch's Bridge, Del., Aug. 25, '84.
"Messrs. Thompson & Campbell,
"Philadelphia, Pa.

"Gentlemen: Your machine was sent here against an —, on condition that we should keep the best, and we tried each machine, and are frank to say that if your machine cost us \$500 and the other was offered us as a present we should take yours, as we cannot find a fault with it. The above machine has a capacity of 50 bushels per hour."

We think best not to publish name, but it will be given upon application. Address, THOMPSON & CAMPBELL, Philadelphia, Pa.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO., Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

CONCLUSIVE PROOF OF THE SUPERIORITY OF THE GRAY NOISELESS ROLLER MILL.

Is furnished by the fact that these celebrated machines will be used by Messrs. C. A. Pillsbury & Co. in their new **PILLSBURY "B" MILL**. All bidders for the work of constructing this immense mill being required to figure on using the **Gray Roller Mills**. The selection of these machines for the new "B" mill was the result of several years practical test in the other mills owned by the same firm in competition with various other roller mills, the decision being unanimous that, in all particulars, for practical work in the mill, **Gray's Noiseless Roller Mills** were superior to all others. We wish to assure our customers who may not wish to build 2,000 barrel mills, but who wish to build mills of smaller capacity, that no matter what size mill they desire to build or how small its capacity, the **Gray Roller Mills** are the best they can use, and we shall at all times furnish machines equal in every respect of material and workmanship to those which will be used in the new **PILLSBURY MILL**.

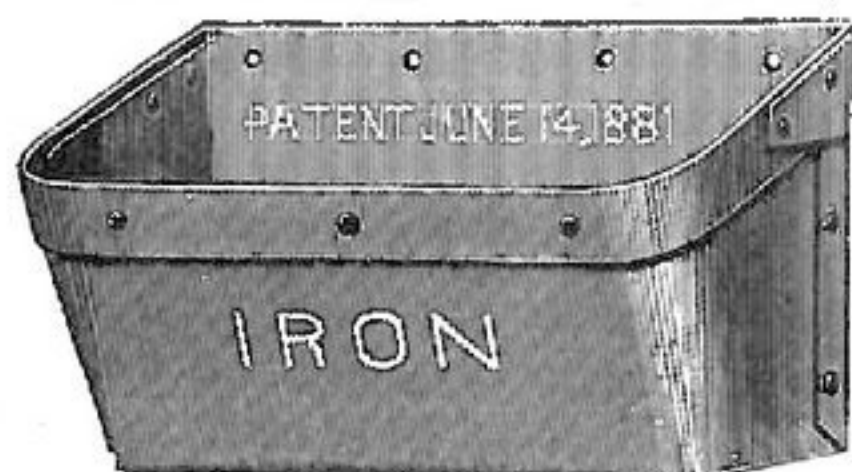
EDW. P. ALLIS & CO., RELIANCE WORKS, MILWAUKEE, WIS.

Sole manufacturers of **Gray's Patent Noiseless Roller Mills**, adapted to mills of any desired capacity.

THE BOSS ELEVATOR CUP



is gaining favor every day. Over 13,000 sold in one day in three different States. My capacity in my new shape is 6,000 per week. I carry 30,000 cups in stock and can take cars of any size order.
W. P. MYER,
19 and 21 E. South St.
INDIANAPOLIS, IND.



Toledo Mill Picks and Stone Tool Mfg. Co



Manufacturer and Dresser of

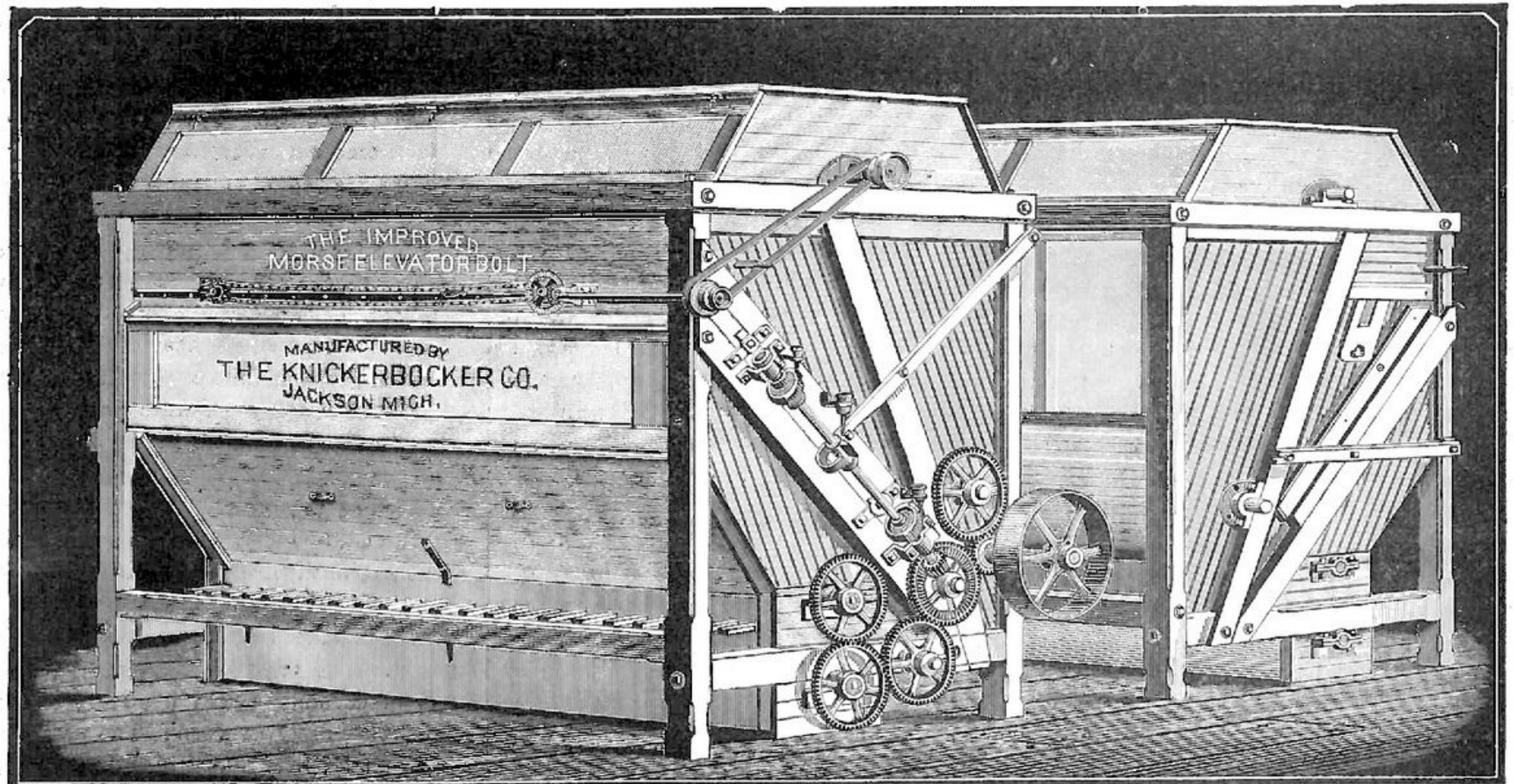
Mill Picks.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY**, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

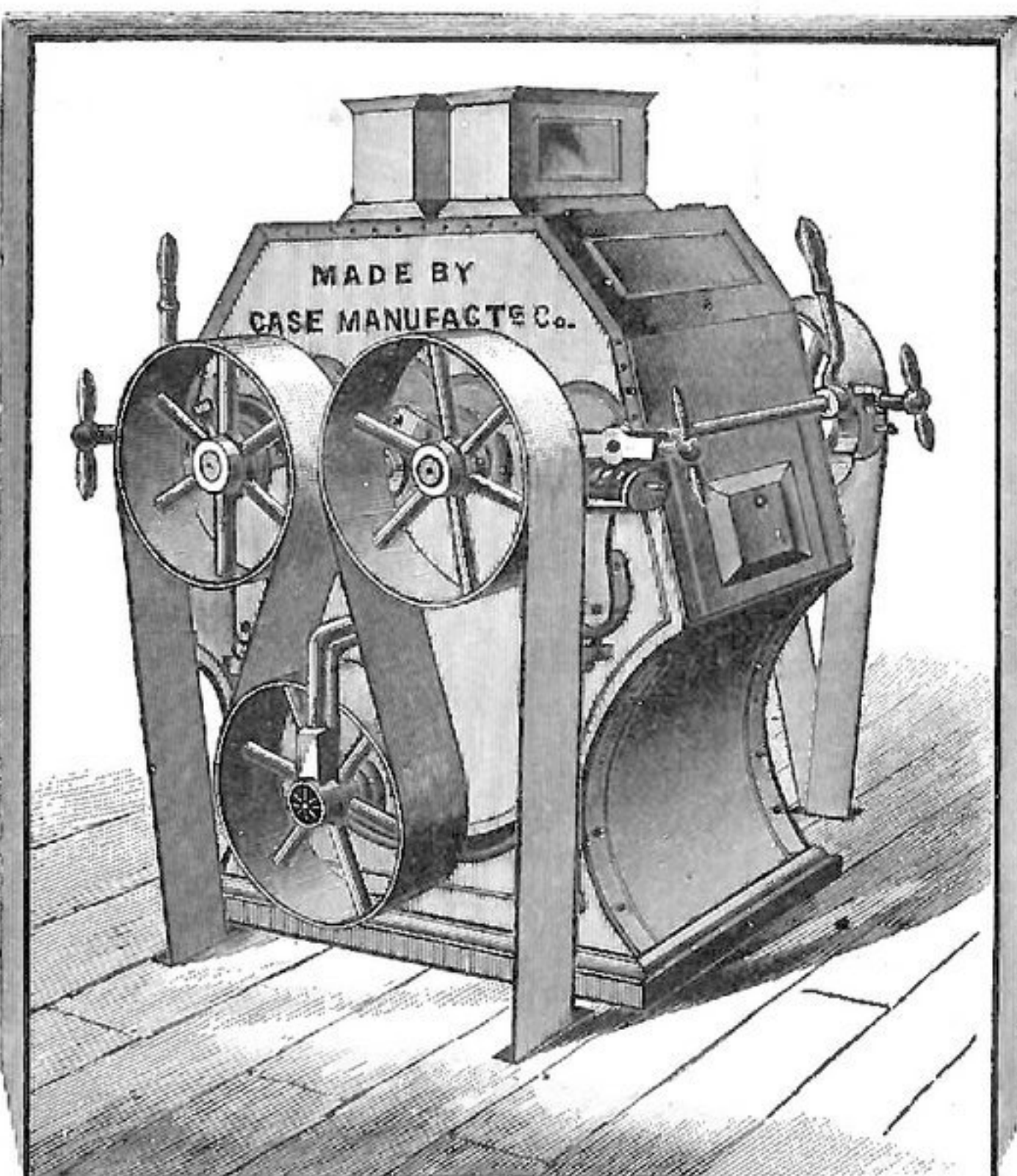
ALSO MANUFACTURERS OF
SHAFTING, PULLEYS, HANGERS, COUPLING
AND MACHINE JOBBING.

The Improved Morse Elevator Bolt.



DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

THE KNICKERBOCKER CO., JACKSON, MICH.



9x18 4-ROLL MILL. "BISMARCK."

C. A. S. E.

CASE MFG. CO., COLUMBUS, OHIO.

XENIA, OHIO, Dec. 15, 1884.

Gentlemen: Feed box received; put it on in a few minutes; started up in a very short time. I was surprised to find my tail over as poor. I examined middlings and found them at least 25 per cent. clearer. Examined flour, was whiter and clear of specks. You know I feel happy, and all because of that little feed box. To sum it up:

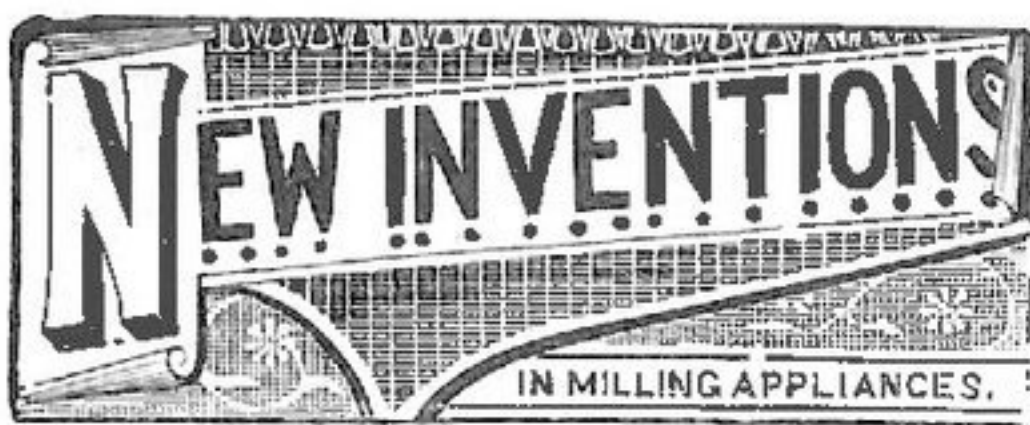
- 1st. Simplicity and Durability.
- 2d. Takes care of itself.
- 3d. Feeds alike all the time.
- 4th. Will increase capacity of any Purifier one-fourth.
- 5th. Will make clearer middlings by Twenty-Five per cent.
- 6th. No miller can afford to do without one on any machine in mill.
- 7th. Perfection is the name.

Wishing you a Happy and Merry Christmas, I am, Respectfully yours,

W. H. HARBISON.

We invite all who Contemplate Making any Changes in their Mill to Write to us or Come and See us Before Placing Their Orders.

THE CASE MFG. CO., COLUMBUS, OHIO.



COMBINED GRAIN SEPARATOR AND SMUTTER.

Letters Patent No. 312,369, dated February 17 1885, to Harry Leonard Martin, of Lancaster, Pennsylvania. The object of this invention is to facilitate the cleaning of wheat and other grain, and promote thoroughness in such cleaning. To the top of the frame is attached a box or casing forming a chamber for a rotating screen, the shaft of which revolves in bearings in the ends of the chamber. The screen is formed with six (more or less) ribs, and its covering is made of wire-cloth or perforated sheet metal, and in three sections. The upper or head section, is made with such a fineness of mesh or perforation as to allow only the dust and fine sand to pass through. The middle section is coarser, so as to allow cockle-seed and other fine seeds to pass through. The lower or tail section is the coarsest, and is designed to allow the grain to pass through. The tailings escape from the open lower end of the screen. The screen is made with an annular head, through the open center of which passes feed-spout through which the grain is introduced into the said screen. The bottom of the screen-chamber is made with five hopper-shaped recesses. The recess at the head of the screen is designed to receive the scatterings from the feed-spout and the screen and discharge them into a grain-discharge chamber in the lower part of the head end of the machine. The second recess receives the dust and sand that escape, the said dust and sand passing through a spout into a chamber in the lower part of the machine. The third recess receives the screenings from the middle section of the screen, which screenings pass through a spout into a small chamber attached to the side of the casing of the exhaust fan and opens into the said exhaust-fan. The fourth recess receives the grain from the tail sections of the screen, which grain falls into a well. The fifth recess receives the tailings from the screen, which tailings pass through a spout into some suitable receiver. From the fourth recess of the screen-bottom a spout leads to the dust-chamber, so that the exhaust-fan will withdraw the dust from the screen-chamber. To the casing at the other side of the exhaust-fan is attached a dust-chamber, which opens into the exhaust-fan and into a chamber so that the said exhaust-fan can withdraw the dust from the said chamber. Within the chamber is placed a hollow cylinder, the shell of which is perforated at its head part with small holes or slots, and at its tail part with larger slots. The ends of the shell are secured by long bolts against the heads, the said bolts passing through lugs formed upon the edges of the said heads. The heads are formed with projecting cylindrical chambers upon their middle parts, and upon the ends of the said chambers are formed hollow gudgeons which revolve in bearings in the frame, and serve as journals to the cylinder. The hollow gudgeons serve as bearings to the shaft, which passes through them through bearings in the frame, and to which, within the cylinder, is attached a smaller cylinder. To this small cylinder are attached radial arms or teeth, which are arranged in a spiral row, and are made of such a length that their outer ends will be close to the inner surface of the shell or large cylinder. To the shaft of the small cylinder are attached spiral flanges extending from the ends of the shaft to the outer ends of the cylinder.

flange being designed to feed the grain into the large cylinder, and the other being designed to feed the grain out of the said cylinder. In the wall of the cylindrical chamber are formed three (more or less) openings, which are covered by cups or buckets, which, as the cylinder revolves, take up the grain in the bottom of the well and cause the said grain to pass through openings so that it will be fed by the spiral flange into the cylinder. In the wall of the cylindrical chamber are formed two (more or less) openings, through which the grain as it is fed into the said chamber by the spiral flange, falls into a discharge-chamber and escapes through an opening in the bottom of the said chamber. The dust beaten from the grain by the teeth escapes through holes or slots in the cylinder-shell, the heavier particles escaping through an opening in the hopper-shaped bottom of the chamber, and the lighter particles being drawn out by the exhaust-fan.

ROLLER-MILL.

Letters Patent No. 312,392, dated Feb. 17, 1885, to Geo. T. Smith and William F. Cochrane, of Jackson, Michigan. This is something of a novelty in roller mill inventions, and is difficult of intelligible description without illustrations. It may be said, however, that it is quite a radical departure in points of construction, adjustment and operation, from anything we have hitherto seen. The idea of the inventors would appear to have been to get entirely outside the field occupied or traversed by other inventors, and in this they have been entirely successful. The invention consists primarily in mounting the rolls loosely upon the actuating shaft, means being provided whereby they may be caused to revolve with said shaft, or be kept at rest while the shaft is free to revolve. The means for adjusting the relations of the rolls, as also for communicating motion from the shaft to the roll supported by it, are, as before said, difficult of explanation without illustrations. The inventors in their patent show how several pairs of rolls may be supported on common shafts, and the means for throwing one or more pairs into operation while the balance may remain at rest. In their claims the inventors cover the following prime features, viz: In a grinding-mill, the combination of a shaft, a grinding-roll around the shaft supported independently thereof and arranged to have an open space between the shaft and the roll, means for detachably connecting the shaft and roll; an adjustable bearing for the support of the roll, substantially as set forth; a coupler connected with the shaft and rotated thereby, but free to slide, for effecting a disengagement of the shaft from the roll, and provided at one end with an opening of greater diameter than the shaft, whereby the coupling is at one end adapted to engage with the roll and move in a path eccentric to the axis of the shaft; a series of hollow grinding-rolls mounted on a shaft and couplers for connecting each of the rolls with the shaft, whereby one or more of the rolls may be disconnected from the shaft and remain at rest while the other rolls are connected with the shaft and rotate therewith; a second shaft parallel to that aforesaid, a roll surrounding the second shaft, and means for adjusting the said second roll on a line at right angles to the axis of the shaft and independently thereof.

THE GRAIN MOVEMENT AND THE RAILWAYS.

The close of the year 1884 in business circles was noted, among other things, for a conspicuous advance in the price of wheat, which was followed, though with less animation, by quotations for Indian corn. This was announced to be firmly based on a strong holding of wheat in sight by the grain bulls at New York and Chicago. As

outlined in this journal at the time, the source of the information being one of the more pronounced bulls in grain at New York, the bulk of the available supply of wheat had been purchased by those who had faith to believe that wheat had seen its lowest level during the present era of low prices; they had purchased it "all the way from \$1 per bushel down," and were adding to their holdings on every break. They were confident that an advance of at least 15c would be speedily attained and were prepared not to be surprised if wheat touched the dollar mark within thirty days.

It is now evident that their views were fairly well founded. Wheat did advance 15c. per bushel from the lowest point touched, but since January 24 or thereabouts it has reacted from 2a.3c., where it has hung heavily. The markets meantime have been dull, though steady.

The effect of this revival in the price of wheat (and corn and other grains) has been to cause farmers to market their grain more freely, as was to be expected, though few anticipated the extent to which such sales from first hands would be carried. In brief, it may be explained that the receipts at primary markets west and northwest, from December 27 until February 7 (seven weeks), have never been exceeded in any similar period in preceding years—being twice what they were one and three years ago and about one and one-half as large as two years ago. The like receipts of Indian corn were triflingly larger than one year ago, nearly one-eighth heavier than two years ago, and about 1,500,000 bushels heavier than three years ago. The receipts of oats and of barley were also materially heavier than in like periods in any of three preceding years, while those of rye alone were smaller.

An inspection of such reports of granger railway earnings in January as are now available, as compared with those for December last, and as compared in each case with those in the like months in 1884 and in 1883, is not as satisfactory as the mere report of increased grain movements would suggest. The ten roads whose January reports of earnings are at hand announce a net increase of gross earnings as compared with January, 1884, amounting to but \$34,039. The net increase in gross earnings of the same roads in December, 1884, as compared with December, 1883, was \$312,305. In January, St. Paul, Illinois Central, Manitoba, Burlington & Cedar Rapids and Duluth showed an aggregate increase of gross earnings amounting to \$117,361; Central Iowa, Chicago & Alton, Omaha, Wisconsin Central and Northwestern reported an aggregate of decreased gross earnings as against January, 1884, amounting to \$83,312. This indicates clearly that the heavy movement of spring wheat was responsible for the gains, as Illinois Central's was not on its Illinois line. The roads showing decreased earnings take less of spring wheat than those first named, and point unmistakably to a decline in the movement of general merchandise and produce. The one-crop roads, therefore, reaped the harvest. In every instance, in each of the ten roads that are named, were the gross earnings smaller in January last than in December, notwithstanding the enlarged movement of grain, again corroborating the statement that traffic in other lines than that immediately under discussion had fallen away.

It may be inferred that the accumulation of grain at interior markets was followed by a corresponding movement to seaboard. The enhanced prices maintained here and, for the time, the improved demand from the United Kingdom—the enormously decreased stocks held abroad being a powerful stimulant—were all sufficient causes. Wheat receipts at seaboard during the seven weeks under discussion were larger than they were in 1882, after the short crop of

1881, less than two thirds of those of 1883, and one and two-thirds as large as those of 1884. Indian corn receipts are the largest recorded in a like period, being more than twice as heavy as one year ago. Oats and barley receipts at seaboard are in excess of previous records, while receipts of rye are but little over one-half of those of one year ago, although in excess of those in 1883 and in 1882.

The arrivals at tidewater this year amounted to 60 per cent. of those at primary markets, against 36 per cent. a year ago, 64 per cent. two years ago. The receipts of barrels of flour at tidewater during the same period is heavier than one year ago, though but two-thirds as large as in 1882-83.

The heavy shipments of grain and flour east from Chicago may in like way be inferred to have produced a favorable affect on the earnings of the trunk lines, as the interference of snow and storms has interrupted traffic a good-deal, and enabled them to maintain east-bound rates where the pool arrangement did not. The returns of the eastern trunk lines for January are so meager as to furnish no basis for comparison. It may be noted, however, that Grand Trunk's gross earnings for January were but \$39,994 less than in January, 1884 while in December last they were \$189,765 smaller than in December, 1883. The January gross earnings of Wabash (a heavy corn carrying road) were \$58,481 in excess of those in January, 1884, while in December they were \$69,904 less than in December, 1883. But there remains the encouragement for the eastern lines that the long-expected grain movement has begun, and, although late and delayed, that the stuff has got to be carried. What may result in exhibits of losses for February reports may possibly find its way into the columns of gains for March.

The grain export movement has been quite as favorable as was to be anticipated from the animation outlined in its passage from farmer's hands to the seaboard.—Bradstreet's.

NOTES.

The German Reichstag decided on February 6 against the participation of Germans in the forthcoming exhibition at Antwerp. Von Boetticher, Minister of the Interior, said Germany had received no official invitation to take part in the exhibition, and he in any event preferred national to international industrial exhibitions.

The quarterly statement of accounts of the Star Corn Millers' Society (Lim.) Oldham, for the last quarter of 1884, is very satisfactory, the realized profits in the quarter being £1,432 5s. 3d., from which a dividend of 4d. in the pound on all purchases is recommended by the committee. The society adopted Simon's roller system some time ago, and now report that their flour is giving every satisfaction.

The London Flour Millers' Association met at 61, Mark Lane, on Jan 21, and elected Mr. E. R. Lightfoot (Simonds & Morton) as vice chairman, in the place of Mr. W. E. Westrup, resigned. Mr. Peter Mumford drew attention to the present contracts on which they bought wheats, and especially to the "10 per cent more or less" clause, which, in the case of "parcels," was, he considered, not just. It was decided to oppose the present form of contract, and the question was adjourned for discussion at a special meeting in February.

The proposed tax on flour imported into Germany is 3m. to 5m. per 100 kil., which is equal to 3s. to 5s. per 220 lbs. The previous tax was 2m., which had already had the effect of largely reducing the imports of Hungarian flour into Germany; indeed the German imports of all articles from Hungary have largely fallen off, as the following figures show:

	Wheat.	Barley.	Flour.
1882.....	1,289,468	1,190,097	309,727
1883.....	757,795	500,204	275,388
1884 (9 months) ...	207,668	375,017	166,420

These quantities are in quintals of 220½ pounds.

A subscriber writes to the "Miller's Gazette" with regard to the consumption of wheat in the U. K., and expresses the opinion that the better quality of the flour, as well as the low price, has helped to increase the consumption. Baking at home, he says, he can testify to the greater run upon bread, it being so much better than formerly,

partly owing to more general introduction of roller milling. In his district, which is a very populous one, the bakers say that their customers now refuse the quality of bread which was regularly sold a year or two ago. Many stone-millers having to compete with roller-made flour in their respective districts will endorse this last statement.

In the general discussion now going on over the relative merits of the various Central American canals little notice is taken of the progress being made by the Corinth Canal Company in cutting through the isthmus of Corinth. The route of this canal is from the town of Corinth, on the gulf of that name, to the town of Kalamaki, on the gulf of Aegina, and will divide Morea from the mainland of Greece. The canal will be about four miles long, and it is expected will be ready for business in about three years. About one-eighth of the canal bed is said to be already excavated, and the work is proceeding very satisfactorily. There is said to be an important traffic in freight and passengers across the isthmus, which is at present handled by railway.

In a recent debate in the Hungarian House of Deputies, it was stated that Hungary was becoming the storehouse and distributing agency of eastern Europe, and this was owing chiefly to the complete railway system existing in that country. It was also said that the flour from the mills of Budapest was increasing in favor. The charge that a large quantity of the wheat ground in Budapest was not Hungarian but Servian and other foreign inferior wheats was stated to be misleading, and that while large quantities of those wheats were handled in Budapest, there was very little of it used in making flour, but was stored for export to foreign countries. It was stated also that the total stocks of Servian and Roumanian in Hungary were not one-seventh of the total flour exports from that country, and that consequently the little foreign wheat used could not seriously affect the quality of Hungarian flour.

TRIMMER'S Improved Adjustable GRAIN RUBBING, POLISHING —AND— SEPARATING MACHINE COMBINED.

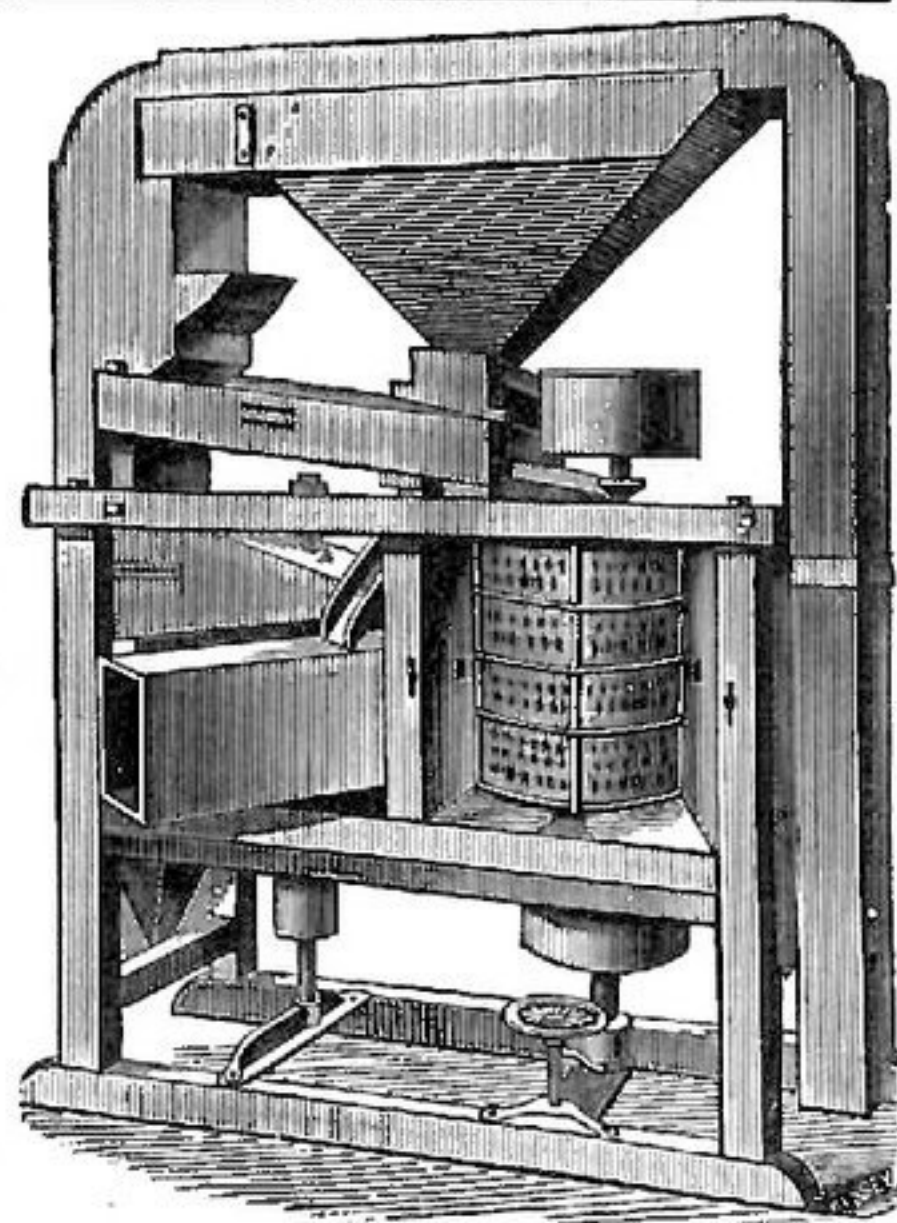
It will clean, rub and separate wheat, and take out the rat balls, black stick seeds, joints of straws, cockle and other impurities. It will also rub off more fuzzy ends and dust from the creases of the berries, by rubbing the wheat together as it passes up between the rubbers, so each berry must get rubbed, scoured, and polished alike. It will do all of this work better and last longer than any other machine of the kind. All this we guarantee. It will also clean barley and rye.

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Successors to Kreider, Campbell & Co.,
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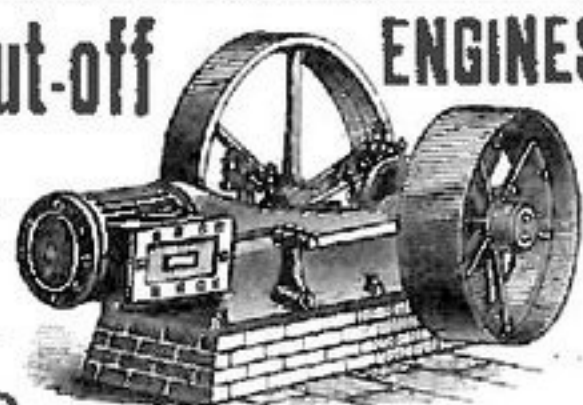
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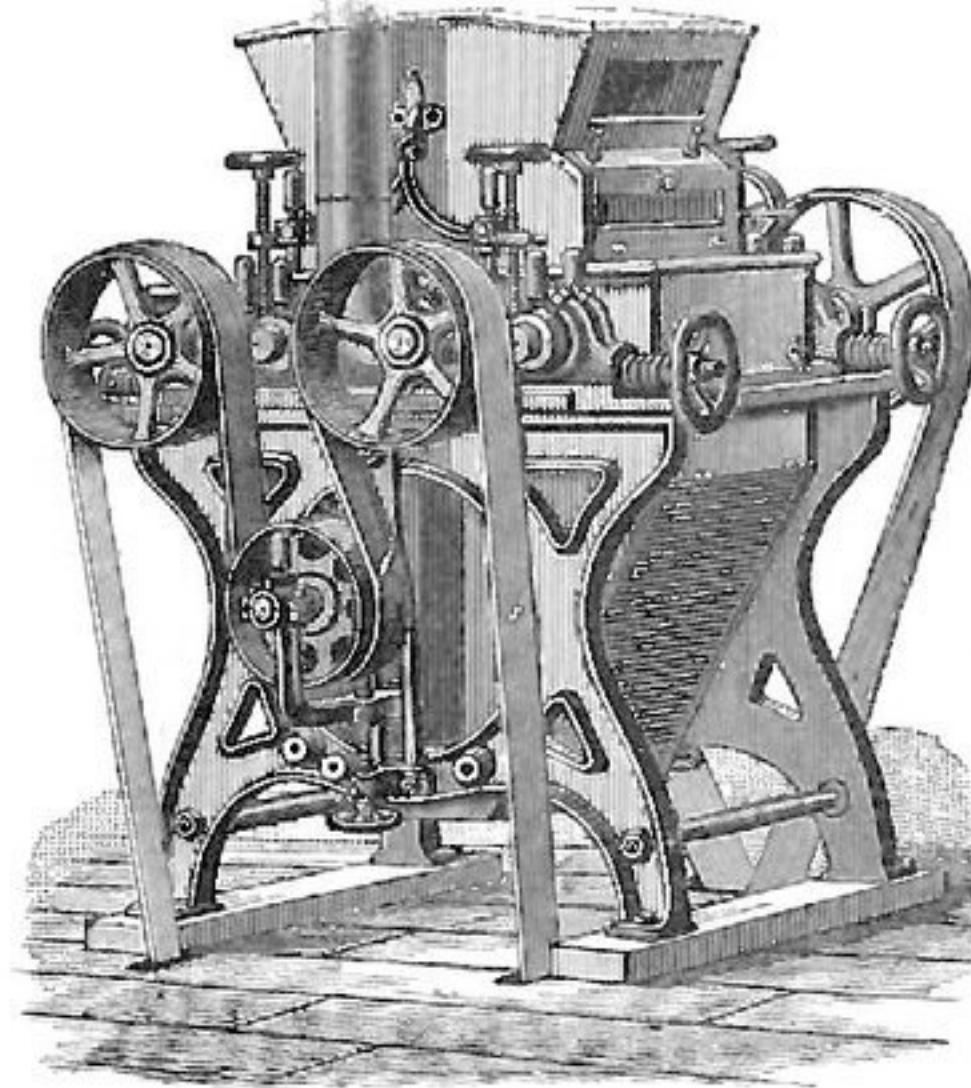
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Requires Less Power to Drive,
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Better Granulation,
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THAN ANY OTHER ROLLER MILL.

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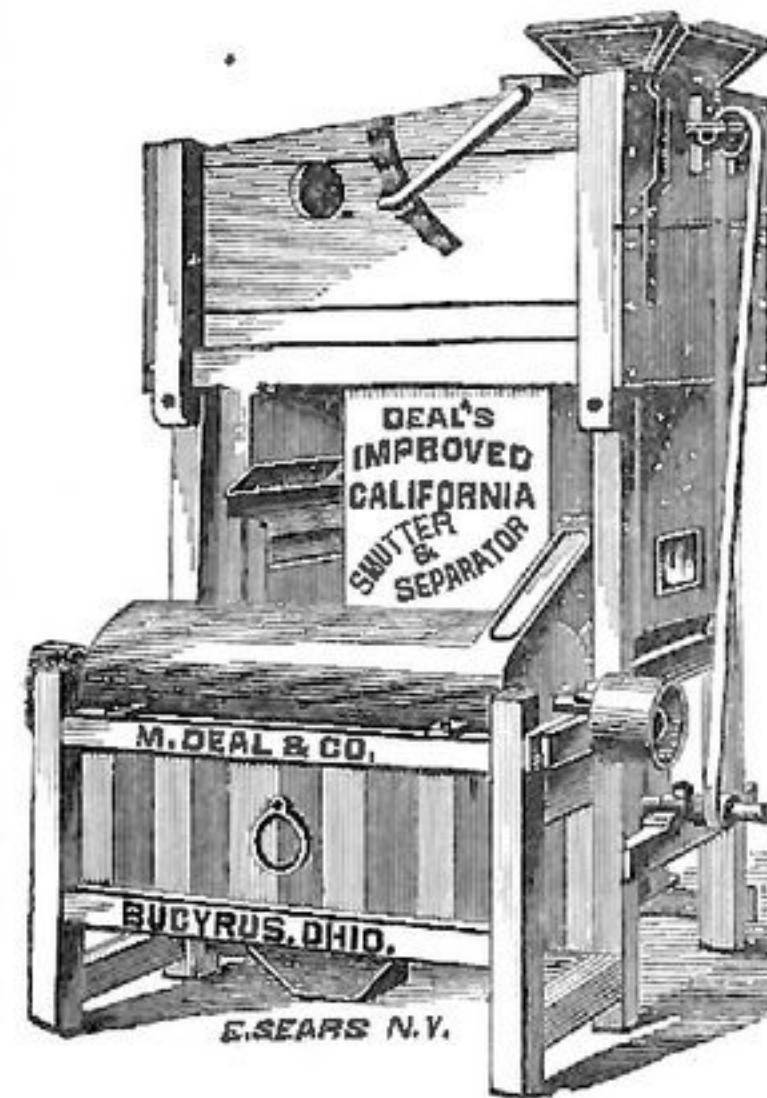
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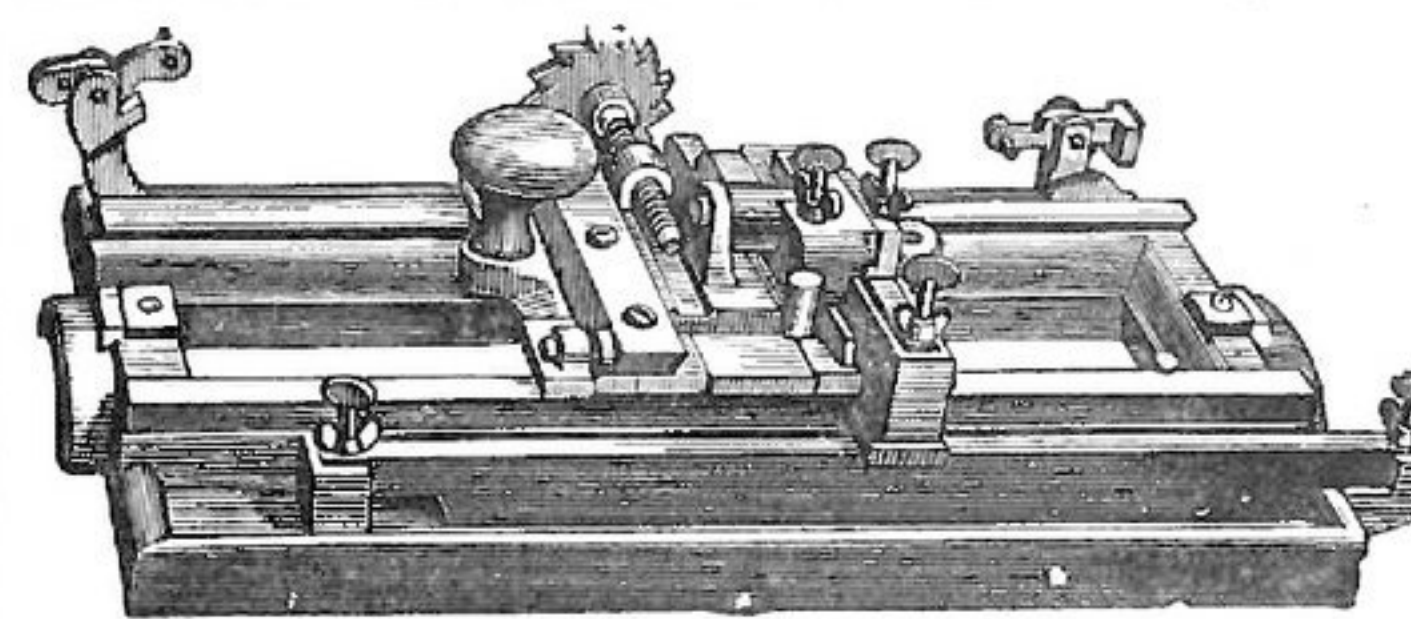


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ADAPTED TO ALL KINDS OF
DRESSING.

No. 1, to face and crack	\$25.00
No. 2, to face, crack, dress furrows, and will dress any size stone.	45.00
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Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.



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THE GEO. T. SMITH CO.'S CENTRIFUGAL REEL ABROAD.

EXTRACT FROM A LETTER OF THEIR AGENT AT HAMBURG, GERMANY.

"... Have in the latest days been twice in the mill of Mr. Gabbert here (which is built by... with rollers and disintegrators), and with the intention to know the opinion of Mr. Gabbert about your reel, who, as he told me, gave the best testimonial, and said to... that if he had not yet... reels, no other than yours would be put in his mill, and that he is now sifting the whole flour produced by his mill, through the No. 0 reel, about 2,000 pounds per hour... shook their heads and replied that it seems advised to wait for the result after some longer time, but Mr. Gabbert as he has now the No. 0 reel for two months answered that they might be convinced of your reel to be in fact a large new success. Not less than three reels of... (price \$300 each, 550 mm. diameter), would be required to do the work of your No. 0 reel for flour producing."

HAMBURG, GERMANY, Jan. 24, 1885.



Office of THE MILLING WORLD,
Buffalo, N. Y., Feb. 25, 1885.

The Commercial Bulletin reports that the stock of wheat in store in New York was 5,820,868 bushels, against 6,192,021 bushels last week—a decrease of 371,153 bushels. Stock of No. 2 red wheat, 4,850,870 bushels, against 5,041,808 bushels last week—a decrease of 191,338 bushels. On Saturday, members of the exchange looked forward with happy anticipation to the relief from the monotony of the market which would be offered by the holiday on Monday; to-day they looked back with regret that the holiday was over. To-day the market has been duller than on any previous day in the past two weeks. The pit at intervals was absolutely deserted. The trading fraternity amused itself by "quips and cranks and wanton whiles," while commission houses did nothing. The foreign situation was unchanged. Public cables were stupid, and private cables were inactive, and some were lower. The West reported warmer weather, but as yet the snow has not passed off, so it is impossible to tell whether or not the growing crop has been damaged. The cash market was fully as dull as the option market. In the afternoon the market for futures was depressed on the dull cash trade and receipts of 1,055 cars at primary markets, against 356 last Tuesday. As compared with Saturday's official closing, the market opened $\frac{1}{8}$ a. $\frac{1}{4}$ c. higher; at the highest point prices showed an advance of $\frac{1}{4}$ a. $\frac{3}{8}$ c; at the lowest $\frac{1}{2}$ a. $\frac{3}{8}$ c. lower, and finally $\frac{3}{8}$ c. lower, with the tone of the market lower.

The flour market is still quiet, though steady for grades valued at or under \$4.00. Some parties claim that there was a little better demand yesterday, owing to Monday's holiday, but we cannot discover any noticeable improvement. Low grades are still scarce and firmly held, while high grades are not wanted and values are more or less nominal. For corn goods there is a fair demand, with the market steady. Mill feed is steady at late prices; track receipts continue to run light, and offerings for city feed moderate; bran quoted at 80a.82 $\frac{1}{2}$ c; middlings, 80a.90c. The market for rye flour has ruled steady, with a fair demand at \$3.50a.3.85, the latter for fancy. Buckwheat flour is very irregular on the basis of \$2.25a.2.70.

Corn has given no occupation for traders on commission houses. News from abroad was of a discouraging character. At Liverpool corn has declined 1 1-5c. since Saturday, and as freights were down very low before there was little chance of a further drop making up for the falling markets. Receipts were light, both here and at Chicago. The local stock showed a smaller decrease than expected, but is still small. There is a large amount of corn side-tracked, and the clearing up of the blockades is expected to bring considerable lines of corn on the market.

FOREIGN EXCHANGE.

The market for sterling was somewhat heavy, and posted rates were reduced, owing to offerings of bankers' bills against securities bought here for London account, but actual rates were not affected materially. Posted rates were 4.84 $\frac{1}{2}$ a. 4.87. Actual rates were as follows: Sixty days', 4.88 a. 4.83 $\frac{1}{4}$; demand, 4.86 a. 4.86 $\frac{1}{2}$; cables, 4.86 $\frac{1}{2}$ a. 4.87; commercial bills, a. 4.82. Continental bills were quoted as follows: francs, 5.23 $\frac{3}{8}$ and 5.20 $\frac{3}{8}$; s. 94 $\frac{1}{2}$ a. 94 $\frac{1}{2}$ and 95 a. 95 $\frac{1}{2}$; and

40 $\frac{3}{4}$. The closing posted rates were as follows:

	60 days.	90 days.
London.....	4 83 $\frac{1}{2}$	4 87
Paris francs.....	5 20 $\frac{3}{8}$	5 18 $\frac{1}{2}$
Geneva.....	5 20	5 17 $\frac{1}{2}$
Berlin, reichsmarks.....	94 $\frac{1}{2}$	95 $\frac{1}{2}$
Amsterdam, guilders.....	40 $\frac{1}{2}$	40 $\frac{1}{2}$

BUFFALO WHEAT MARKET.

BUFFALO, N. Y., Feb. 25, 1885.

The sales during the past week have been pretty heavy and the market has been dropping gradually. No. 1 hard being quoted at 93¢-day; No. 2, 91c. There is no No. 1 northern on the market, but it is quoted at 92 $\frac{1}{2}$ ¢ and No. 2 northern 88. Corn scarce and active for carloads on track; 48 asked for No. 2; No. 2 yellow, 48 $\frac{1}{2}$ ¢; No. 3, 47. No. 2 white oats 35 $\frac{1}{2}$ ¢; mixed western, 34 for carloads.

J. S. MCGOWAN & SON.

BUFFALO MARKETS.

FLOUR—City ground clear Northern Pacific spring \$4.75@5.25; straight Northern Pacific spring, \$5.25@5.75; amber, \$5.00@5.25; white winter, \$5.00@5.25; new process, \$5.75@6.00; Graham flour, \$4.50@4.75. Western straight Minnesota bakers, \$5.00@5.25; clear 'do, \$4.75@5.25; white winter, \$5.00@5.25; new process, \$6.25@6.50; low grade flour, \$2.75@4.00. **OATMEAL**—Ingersol \$5.00; Bannerman's \$5.25; Akron \$5.50. **CORN-MEAL**—Coarse, 90c; fine, \$1.10 per cwt. **RYE FLOUR**—In fair demand \$4.00@4.25. **WHEAT**—Steady. Sales 3,500 bu No. 1 hard Northern Pacific at 94c; 4 car-loads do at 94c; at the Call Board 95c asked cash; 96c asked March; 94c bid April; sale 1,000 bu No. 2 Northern at 80c cash; for No. 1 Northern 93 $\frac{1}{2}$ c asked cash Feb. and June. Winter wheat dull; for No. 2 red 91c asked cash and Feb.; for No. 1 white 92c asked cash and Feb.; 94c asked March. **CORN**—Active and firm. Sales 70 car-loads Nos. 2 and 3, in part to arrive at 47 $\frac{3}{4}$ @48c, 5 do No. 3 mixed at 47 $\frac{3}{4}$ c, 13 do No. 3 yellow at 47 $\frac{3}{4}$ @48c; for No. 2, at the Call Board, 46 $\frac{1}{2}$ c asked, 46c bid May, for No. 3 yellow 48c bid cash. **OATS**—Weak. Sales one car load No. 2 white at 37c; 36c asked on track; 35 $\frac{1}{4}$ c asked 34c bid May. **BARLEY**—Firm. Canadian quoted at 78@79c, State at 55@77c, and Western at 55@68c, as to color and quality. **RYE**—Choice State 80c., No. 2 Western at 74@75c.

NOTES.

The D. Keefer Milling Co., Covington, Ky., will have a full roller mill completed in time for this year's harvest, to replace their mill recently burned.

Steele & Code have purchased the San Marcos mill property at San Marcos, Texas, embracing grist mill and ice factory, and have put in complete machinery.

The dividend paid during the past year by the Elizabeth mill at Budapest to its stockholders amounted to ten per cent., after setting aside a liberal addition to the reserve fund, which now amounts to 300,000fl.

The total area under cultivation of rice in Burma is reported as 3,640,000 acres. An average crop all over the Province ought to yield an exportable surplus of 988,000 tons of cargo rice. Although many of the district officers anticipate a crop considerably above the average, it appears better not to estimate for an exportable surplus of more than 975,000 tons, or 104,000 tons below the actual exports of 1882.

The annual report of the Board of Grain Inspectors, of Dakota, is very full and exhaustive. The present wheat crop of the state is estimated at 26,000,000 bushels, with quality well sustained. The aggregate elevator capacity of the state is 6,000,000 bushels; the total shipments of wheat through elevators and warehouses were about 11,200,000 bushels. Much the largest amount is done by the large elevator companies, but there are other warehouses at most of the grain centers of the state. Their capacity is below the requirements of the trade.

THE grain trade of Memphis, Tenn., has become so extensive since the completion of the Kansas City, Springfield & Memphis Railroad, that many prominent grain men are intending to locate in that city. Messrs. Halliday & Phillips, of Cairo, Ill., will build elevators and establish a new barge line for the purpose of shipping grain direct, via New Orleans, to Europe. The Memphis & Charleston and the Louisville & Nashville Roads are unable to furnish cars for the

carriage of the grain being distributed now from that point, instead of St. Louis as formerly.

THE Agricultural Department Report, issued on Jan. 22, places a full estimate of the corn crop at 1,795,728,432 bushels, the largest aggregate, but not the largest yield per acre, ever grown; its average was 25.06 bushels, which has not been excelled since 1880. The farm value of the crop is estimated at \$40,135,859, less by \$18,000,000 than that of 1883, the prices being respectively in those years 35.08 and 42 cents. The average price is 36.5 cents, or one cent less than in 1879. It has been lower in ten years twice only, in 1877-'78, after two large crops. It is highest in Florida, 80 cents per bushel, and the lowest price is 18 cents in Nebraska; Kansas 22, Iowa 23, Missouri 26, Illinois 31, Minnesota 33, Indiana and Wisconsin 36, Michigan 40, Dakota 41, Kentucky 43. It is 52 in Pennsylvania, 54 in New Jersey, and sixty in New York. The range of values in the South Atlantic states is from 68 in Delaware to 68 in South Carolina, and 80 in Florida, increasing in the order of movement, except that Georgia reports 70 cents. In the more Western states it is 45 in Tennessee, 54 in Arkansas, 61 in Alabama, 62 in Mississippi and Texas, and 67 in Louisiana. Nebraska returns, as the state average, 18 cents per bushel, the price varying in different counties from 12 to 23 cents. The wheat crop is estimated at 512,763,900 bushel, valued at \$330,861,254; the average farm prices being 65 cents, against 91 cents last December. The December price in thirteen years has been below \$1 per bushel in the five years, 1874-'78-'80-'82-'83. The average in Nebraska is 45 cents, 45 in Kansas, 46 in Dakota, 50 in Minnesota, 55 in Iowa, 62 in Missouri, 63 in Illinois, 67 in Indiana, 74 in Michigan, and 75 in Ohio. The average home-grown wheat in New England exceeds \$1, in New York it is 85 cents, in Pennsylvania 86. It is 80 cents in Virginia and 83 in Maryland. The price of wheat is lower than it has ever been reported by the department. It is said to be lower in Great Britain than at any other period of the present century. It is a result that is perfectly natural, and that has been predicted repeatedly in these reports; a series of crop failures altogether unprecedented in Europe, stimulating production all over the world, could have no other outcome. These low prices, however, will soon reduce the area and relieve over-production. The crop of oats also presents the highest aggregate ever grown in this country; the area was larger by 1,000,000 bushels, and the estimated total is 583,628,000, against 571,402,400 bushels in 1883. The estimated yield per acre is 27.04 against 28.01 in 1883; the average price is 57.07 or 5.03 cents less than that of the previous crop, and the lowest ever reported except the average of 1878, 24.06 cents, when the yield was placed at 31.04; the aggregate was the largest ever made up to that date. The downward tendency of corn at that time was an additional depressing cause.

THE St. Louis, Mo., "Republican," a few days since, had the following: A month ago the flour trade in St. Louis was booming; there was a good foreign demand and a heavy inland trade; the prospects were brilliant for a good season and millers began to work full hours. Flour had reached the bedrock of low prices during the closing days of 1884, and it was thought that lower prices were impossible. The brisk upward movement that set the wheels going for a while was of brief duration; a strong decline set in and the bottom fell out of the entire flour trade. As a consequence, nearly all the mills in St. Louis and vicinity are shutting down, and it is safe to say that

shortly not a single mill owned by members of the Exchange will be running full time. Various explanations are given by prominent millers, but the situation seems to be as follows: The foreign demand has ceased entirely, and domestic buyers are taking only so much flour as they actually need—are buying from hand to mouth. There is, consequently, no possibility of disposing of flour even at cost, and as consumers seem to think that present prices will prevail until the new crop comes in, the most sensible thing to do is to shut down. Some millers attribute the whole difficulty to the extremely cold weather now prevailing, by means of which all communication is shut off. The millers, speaking generally, say that everything is too cheap, and that if wheat to-day was worth \$1, business would be better all over the country. It is impossible to sell the flour at a profit at present, they say, and hence they might as well wait until the prospects become better. One large milling firm said they received a large cable order recently, but declined to fill it because it left no margin of profit.

HOW TO BAKE BREAD.

And so, Miss Mehitable Nutmegs, you write to "Puck" for directions for making bread. Don't you know that this is not a bakery, nor a parlor cooking school? We are here to make bread, but not to teach the art. However, since you want to know something about it, here you are.

First cause some flour to be procured from the nearest grocer's. Hang up the grocer. It will take the conceit out of him. Then take a hunk of the flour about three times the size of the loaf you want to make. Pour in a quart or two of milk and water, slap in some salt, a little butter, about two teaspoonsful of brown sugar, some slippery elm, and a little beeswax. Then get about a pint of yeast and dump that in.

Then put the whole business in a pan and mix it up. Then take it out and put it on a nice, smooth board and knead it. Oh, then you don't know what kneading bread is? That's where the art comes in. You lay out the dough on the board, and then you begin to smash it with your fists. You pound it and jam it in its neck, and roll it over, and turn it inside out, throw it down on the floor and jump on it, sit on it and walk on it. Then pick it up and throw it against the wall. It will stick. Then stand off and fire potatoes at it. That gives it a fresh country flavor. Mind you do all this industriously. You've got to work if you want to make your own bread.

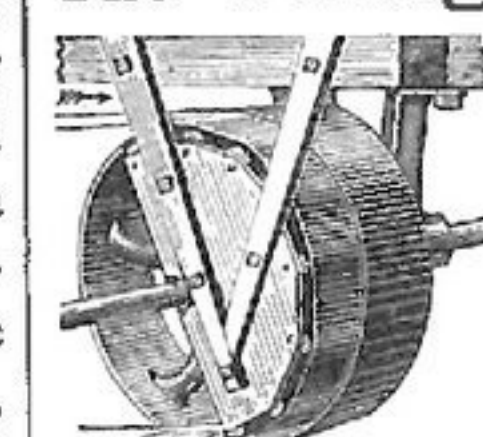
Next put it all back in the pan, and set it in front of the fire to rise. Bread must rise, of course. If your bread does not, then sell it short and it will be sure to rise. Or hire a dynamiter to raise it for you. Or get your mother-in-law to blow it up. It's always well to be prepared for any emergency. When your bread has risen, put it in the oven and bake it until it is baked.

Then eat it—if you can.—Puck.

JAMES S. MCGOWAN & SON, SHIPPING AND COMMISSION MERCHANTS.

Choice Milling Wheats a Specialty
Room 60 Board of Trade Building.
BUFFALO, N. Y.
No Charge for Inspection

The Wellington Belt Holder.



A NEW IDEA!
BETTER AND CHEAPER THAN
LOOSE PULLEYS.
BETTER AND FAR CHEAPER
THAN DEAD PULLEYS.
Our Customers Like it and
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NORDYKE & MARMON CO., INDIANAPOLIS, IND.

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ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES OF ALL THE PATENTS UPON THIS ROLLER MILL.

This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.

100 BARREL MILL IN TENNESSEE.

Messrs. Nordyke & Marmon Co., Indianapolis, Ind.

Gentlemen: Our mill, as planned and diagramed by you, has been in steady operation for near one year past, and in proof that you have given us a successful job, we will simply say that in the face of very dull trade, and while other mills were running on short time, we have been running full handed, in order to supply a genuine demand for our flours. We must also notice, that although you only promised us 100 bbl. capacity, we easily make 140 bbls per day without deteriorating in grades of flours. We use No. 2 wheat, and consume 4 bushels and 28 lbs. in making a barrel of flour. We make about 26 per cent. of very high patent, 68 of bakers' and 6 per cent. of low grade. Yet our mill is so constructed that we may vary these percentages to suit various markets. We have always been victorious in the sharpest competition, and from the first day of starting we have kept the highest position among all roller mills either located or represented in this region.

Memphis, Tenn., Dec. 16, 1884.

Yours truly,

G. W. COWEN & CO.

300 BARREL MILL IN ILLINOIS.

Messrs. Nordyke & Marmon Co., Indianapolis, Ind.

Gents: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.

Office of David Suppiger & Co., Highland, Ill., Jan. 10, 1884.

Yours respectfully,

DAVID SUPPIGER & CO.

125 BARREL MILL IN INDIANA.

Nordyke & Marmon Co., Indianapolis, Ind.

Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.

Lapel, Madison County, Ind., Jan. 10, 1884.

Yours truly,

J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

SPECIAL MILLING DEPARTMENT!

Mill Builders & Contractors--Guarantee Results

Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.

CAREY'S CELEBRATED MILL PICKS

All Warranted made of Best Quality Cast Steel 50 cents per pound.

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CAREY'S DOUBLE ANCHOR BOLTING CLOTH.

UNION STONE CO., BOSTON, MASS.

PATENT MILLSTONE CEMENT.

Invaluable to Millers for Repairing and Filling the Joints,

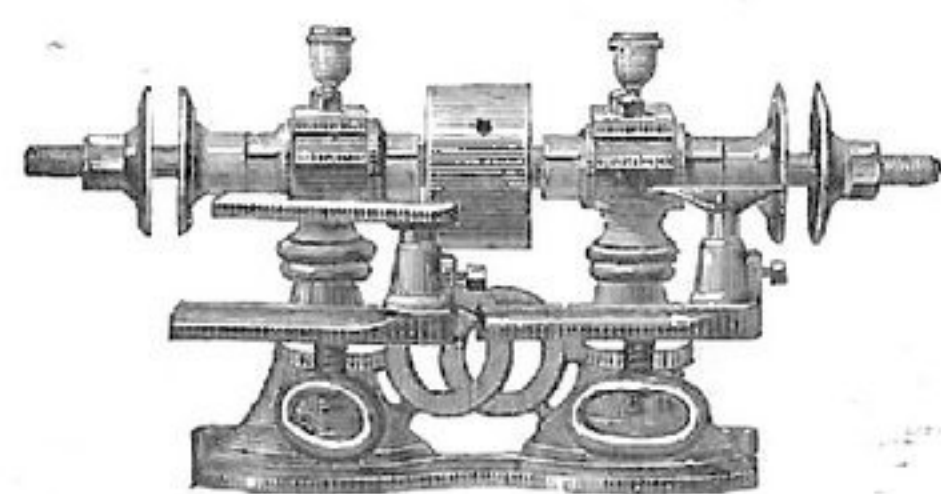
This is a new article of manufacture, and is greatly superior to the preparations now in common use, containing nothing of a poisonous nature. It has the nature and attains the hardness of a part of the Stone, and assists in grinding. Good Millstones are now in use, composed of miller's use, it is put up in cases of two sizes. Price per case: Small, \$3.00; Large, \$5.00. Otherwise we shall send C. O. D. by Express, collecting for return of the money. For manufacturers, the Furrows and

TRADE MARK.



Cavities and Seams in French Burr and other Millstones.

use by millers. It is much cheaper, and can be applied by an inexperienced person. It is perfectly of French Burr Stone, wears evenly with it, and not only fills the cavity, but adheres to and betirely of this preparation. The Leading Makers are Adopting it to Build Their Millstones. For We cannot open an account for so small a sum, therefore Cash should be sent with order, otherwise we furnish in bbls. of 300 lbs. Price upon application. Emery Rub Stones, for hand use in Finishing Faces of Millstones.



Emery Wheel Machine No. 0 Has 3/4 Inch Arbor.

Union Stone Co., 38 & 40 Hawley Street, Boston, Mass.

PATENTERS AND MANUFACTURERS OF THE

Union Emery Wheels, Emery Wheel Machinery and Tools a Specialty. Wooden Polishing Wheels, Automatic Knife Grinding Machines, Grinders' and Polishers' Supplies. Catalogue on Application.

EMERY, QUARTZ, CORUNDUM.



DI. AND TOOLS, FOR TRUEING EMERY WHEELS

DISTINGUISHING FEATURES OF THE

STEVENS NON-CUTTING ROLLER MILLS

The most substantial in construction.

The best designed frame.

The best feeder.

The best horizontal adjustment.

The best perpendicular adjustment.

The only fine adjustment.

The only successful adjustment made by one hand wheel.

The best spreading device.

The best belt drive.

The best patent noiseless gear.

They have a greater capacity.

They are more easily adjusted.

They are the best in six inch diameters.

They are the most positive in action.

They will out-last any other from 5 to 10 years.

They are famous for evenness and regularity of work.

They will produce more and better shaped middlings.

They will produce less break flour.

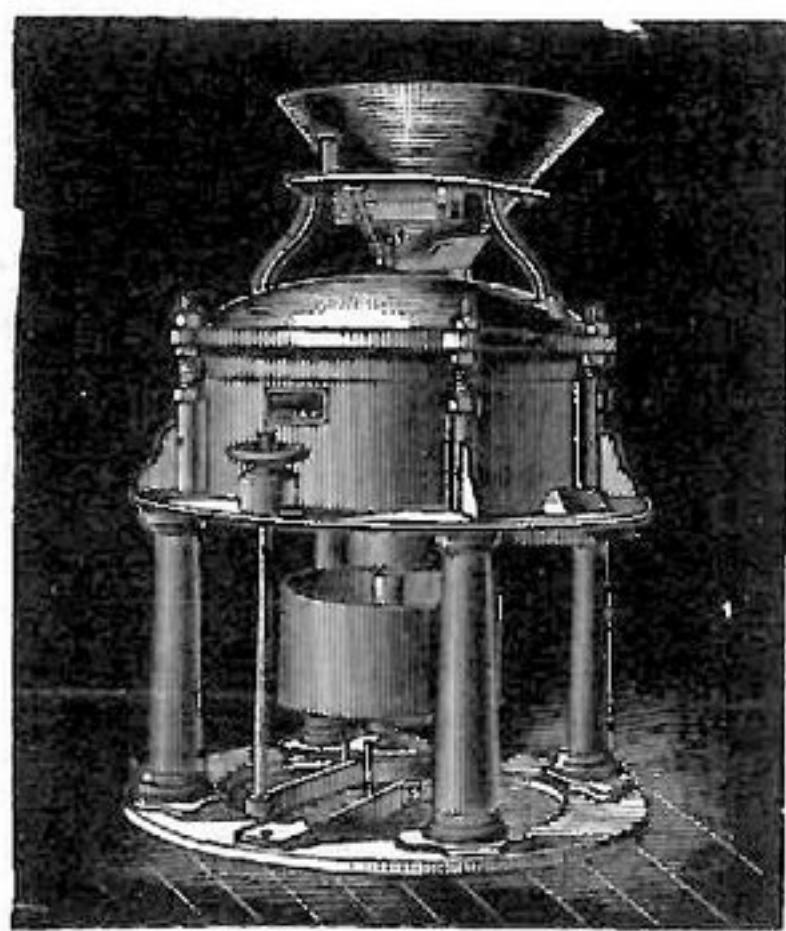
They will produce a broader and flakier bran.

They give better results on either soft, hard, or mixed wheats.

The Over SIXTEEN THOUSAND IN USE Testify To Above.

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THE JOHN T. NOYE MFG. CO., BUFFALO, N. Y., U. S. A.

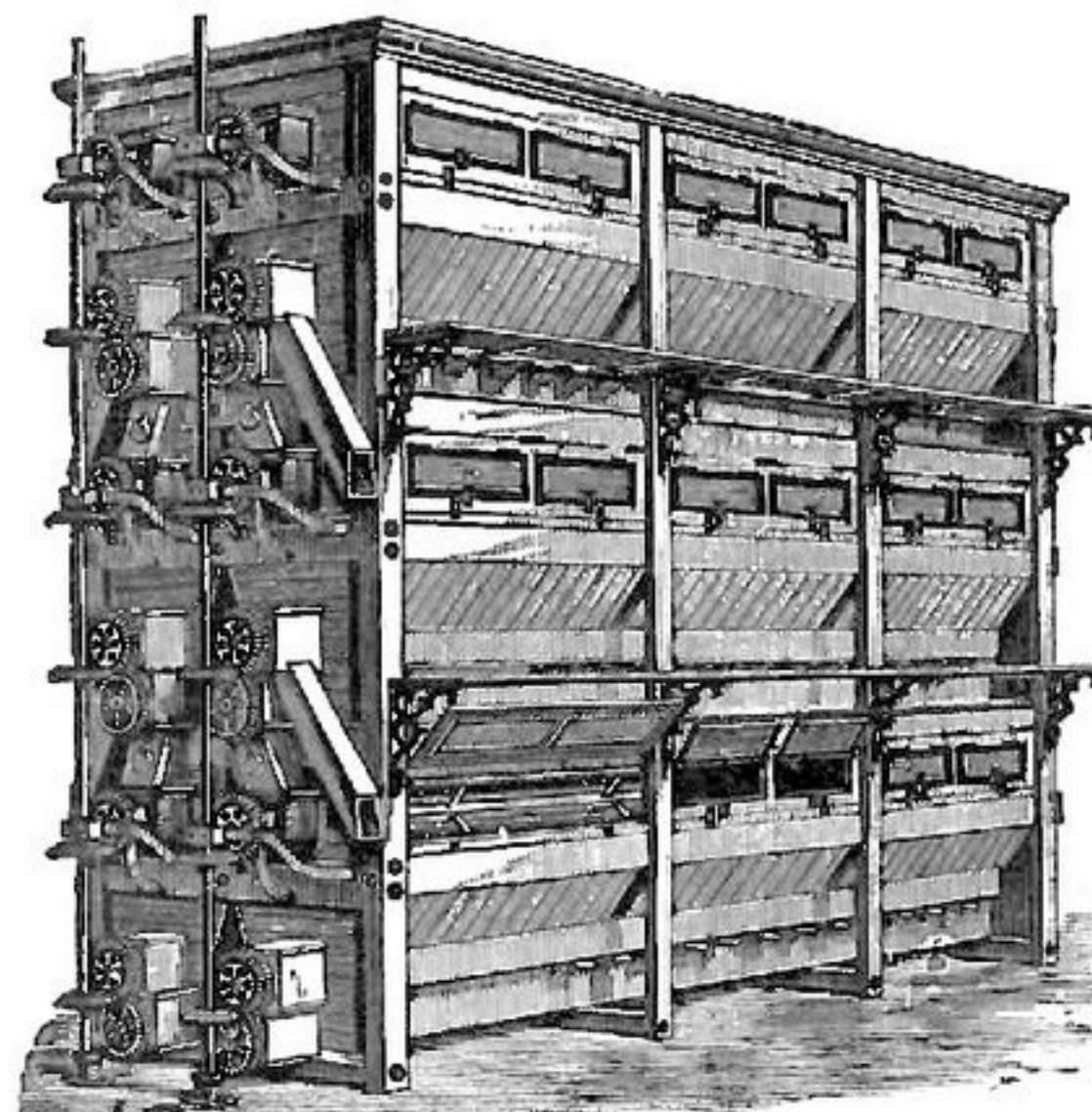


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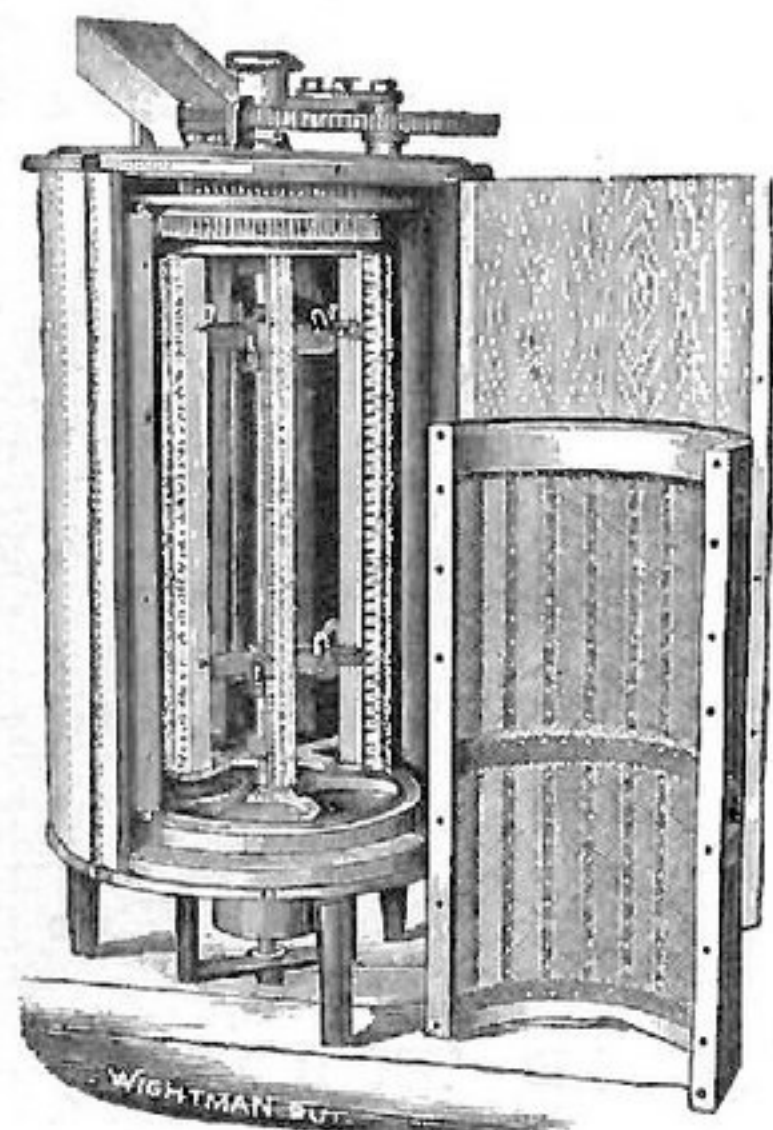
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